

2003 STRATEGIC SURVEY IMPLEMENTATION GUIDE
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2003-2004 STRATEGIC SURVEY IMPLEMENTATION GUIDE



Ramaria araiospora Photo by Dan Powell

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Introduction

One requirement of the Survey and Manage Record of Decision (ROD) and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures (USDA and USDI 2001) was to develop an annual Strategic Survey Implementation Guide. This document identifies species information needs that can be answered through strategic surveys, outlines strategic survey methods and their benefits, and prioritizes surveys for Survey and Manage species at a species range or regional scale.

This document is updated annually to reflect changes in species information needs and priorities from previous year's accomplishments or if new information is needed about the species. If a species changes Survey and Manage categories the strategic survey questions may change for the species. This document will identify survey strategies so that required due dates to complete strategic surveys are met for Category B species (5-year timelines for all taxa groups except fungi, which have a 10-year timeline). This implementation guide identifies what are species information needs and what survey methods will be used to answer these questions. This document will also assist annual work plan development and provide information on long term planning, along with facilitating survey and data collection efficiency.

Strategic surveys are focused on gathering information (sometimes at different scales) about the species range, distribution, and habitat requirements, and are not focused on determining presence or absence prior to habitat-disturbing activities. Information collected from these surveys will assist managers in making recommendations/decisions on which category the species belongs, or if the species meets the criteria for inclusion on the Survey and Manage list. Data collected from strategic surveys is used in the Annual Species Review process that evaluates new information about these species, refine survey protocols for pre-disturbance surveys (i.e. reduce agency costs), and provide more flexibility to field units in applying management recommendations that help support other resource objectives of the Northwest Forest Plan.

The ROD (2001) identified four conditions when strategic surveys would be considered complete when any one of the following four conditions apply, and the resultant information has been analyzed and presented in an appropriate form for use by the target audience. Formats may include inputting data into ISMS for use during Annual Species Review process to preparing a summary of data for use in Management Recommendations to assist project planners and line officers. The four conditions are:

1. The objectives of strategic surveys (such as species information needs) have been accomplished and information is sufficient to conclude that existing or resultant management direction will provide a reasonable assurance of persistence.
2. The objectives of strategic surveys (such as species information needs) have been accomplished and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat

associations, how to conduct pre-disturbance surveys, or other strategic survey objectives.

3. Adequate sites or habitat for the species have been located and are appropriately managed to provide reasonable assurance of persistence for the species.
4. For species with very limited habitat, all known potential habitat of the species has been surveyed, and there is little likelihood that additional undiscovered sites of the species will be located by further surveys.

Strategic survey efforts have ranged from broad-scale, multiple species surveys, such as the random grid to more small-scale surveys, such as purposive and Known Site surveys. Each of these survey types has specific objectives. The objectives of the random grid survey are to estimate the species abundance and test the association of land use allocations and late-successional/old-growth habitats. Species information needs and what we currently know about a species define what survey types are utilized. For example, if there is a question about association with late-successional/old-growth habitats, known sites surveys are used.

A separate decision document will provide the rationale and justification for managers to make decisions when strategic surveys are considered complete for a species according to the four conditions described in the ROD. Figure 1 shows a conceptual model of the decision making process when to determine strategic surveys are complete. Once a survey is complete, the results of the survey, along with the known information are used to determine if and/or what type of survey may be necessary to answer information needs. For example, a fungi species known from only one historic location is not detected on the random grid survey and the historic site has been revisited with the species not being relocated. A decision must be made to determine if additional surveys are needed or if it meets one of the four criteria as described in the ROD. A more detailed description of this process is described in Appendix 1.

Strategic Survey Priorities

Strategic survey priorities are based on three factors; 1) Biological, 2) Managerial, and 3) Operational and Logistical factors. Priorities can be set if one or a combination of these factors are present for a species. Species that have high persistence concerns (i.e. relatively few sites, no recent records, high risk of habitat disturbance, etc.); those having management concerns (impact with other resource values, high cost of management, etc.); and/or operational/logistical concerns (Category B species that have designated timelines) are considered high priority species.

Much of the emphasis of current strategic surveys is to comply with ROD mandated deadlines for Category B species and be responsive to the field units to answer their concerns. There are currently 187 Category B Survey and Manage species in all or a portion of their range (167 fungi) that have 5- and 10-year completion dates. In general, species in Category B receive the highest priority. The strategic survey program has responded to field office needs by prioritizing strategic surveys on those units to meet

their concerns. For example, purposive surveys were conducted on field units where there was a concern.

Priorities are also based on the strategic survey project and or the Survey and Manage species. Strategic surveys that collect information about multiple species, e.g. the random grid survey on CVS/FIA plots are high priority projects. Other ongoing work that has been funded but not completed, e.g. *Hemphillia burringtoni* and *H. glandulosa* genetic study, are also considered a high priority. Species that have managerial (causing impacts to other resource values) or logistical (provide data to refine pre-disturbance survey protocols) concerns, e.g. red tree vole and Van Dyke and Larch Mountain salamander, are also given high priority in strategic surveys.

The highest priority strategic surveys for 2003 and 2004 are:

1. Complete field surveys of random grid survey, specimen identification, and data analysis for fungi, lichens, bryophytes, and mollusks (approximately 275 species).
2. Complete red tree vole strategic survey work (random grid survey and radio telemetry study).
3. Conduct known site surveys to collect habitat data for selected species.
4. Expanding the development of habitat models in southern Washington and Oregon.
5. Completing amphibian strategic surveys for Siskiyou Mountains, Larch Mountain and Van Dyke salamanders.
6. Conducting purposive surveys to locate additional sites of targeted species in reserve networks and re-visiting historic species locations.
7. Species specific surveys such as great gray owl and red tree vole radio telemetry.

Strategic Survey priorities may change depending on what alternative is selected in the Supplemental Environmental Impact Statement (SEIS) proposing to remove or amend Survey and Manage standards and guidelines.

Strategic Survey Budgets

Strategic survey budgets have steadily decreased since 2001. Figure 2 displays the percentage of strategic survey costs by survey type for fiscal years 2001-2003. As initial large-scale strategic surveys (random grid) are completed out year budgets are expected to decline and eventually level out at some predictable level.

Review of 2002 Strategic Surveys

Strategic surveys conducted in fiscal year 2002 continued to build on previous strategic survey results and complete existing surveys. Survey efforts in 2002 include: continuation of the region-wide statistically based survey on randomly selected CVS/FIA plots for fungi, lichens, bryophytes, vascular plants, mollusks and red tree vole; purposive surveys for selected species to identify new locations, attempt to locate historic locations, and determine the extent of species ranges; known site surveys to collect more detailed

habitat information at known locations; modeling potential habitat using the Potential Natural Vegetation Model; and species specific surveys. Below is brief summary of the accomplishments of these surveys.

Random Grid – This survey began in 2000 in three pilot areas (Gifford Pinchot, Siuslaw, and Umpqua National Forests) surveying for fungi (189 species), mollusks (17 species), lichens (43 species), bryophytes (15 species), and vascular plants (12 species) on CVS/FIA plots. This survey was expanded to the rest of the Northwest Forest Plan area in 2001. A similar random survey for red tree voles began in late 2001. At this time the field surveys have been completed for lichens, bryophytes, and vascular plants and with the fungi and mollusks being completed in the summer 2003. Field surveys for red tree vole are expected to be completed by the end of 2003. When the data is analyzed these surveys will estimate the species abundance and their association with late-successional/old-growth habitats and/or reserve land-use allocations for those species with detections.

Field surveys for lichens, bryophytes, and vascular plants have been completed with specimen identification and data analysis expected to be completed in spring 2003. Fungi and mollusk surveys will be completed in the summer of 2003. Specimen identification will be completed soon after with data analysis completed either late 2003 or early 2004.

Purposive Surveys – The objective of these surveys was to locate additional sites in high likely habitats or attempt to relocate known sites of species that haven't been observed for several years. Several Forest Service and BLM offices conducted purposive surveys for fungi, lichens, bryophytes, mollusks, and vascular plants in areas of potential habitat. Approximately 17,000 acres were surveyed throughout the region in 2002. A total of 97 species were surveyed for with 365 new locations being discovered. With the exception of a few species relatively few sites were located for each species with this survey method. For example, purposive surveys were conducted on approximately 3,600 acres for 28 *Ramaria* and 13 *Cortinarius* fungal species with only 42 new locations found. Twenty-nine of these 42 locations were from four *Ramaria* species. No locations were found for thirty of the 41 species. Conversely, 81 locations were found while conducting purposive surveys on 2,600 acres for the bryophyte *Ptilidium californicum* in northern California.

A purposive survey was conducted for Shasta salamander in northern California. This survey resulted in extending the species range to the north by approximately 10 miles. In addition, a BLM regional contract was awarded near the end of fiscal year 2002 to survey an additional 13,000 acres for fungi, lichens, bryophytes, mollusks, and vascular plants. Surveys under this contract are currently underway.

Known Site Surveys – These surveys collect habitat data at known locations of survey and manage species. Information from this survey method can be used to help answer if the species is associated with late-successional forests and used in habitat modeling to estimate the amount of potential habitat (based on environmental conditions) in the Northwest Forest Plan. A total of 219 surveys for 29 species were completed in 2002.

Habitat Modeling – Modeling of survey and manage species has occurred at different scales. Large-scale modeling to spatially identify potential habitat using the Potential Natural Vegetation (PNV) model has begun for several species (including *Coptis asplenifolia*, *Plantanthera orbiculata*, *Hypogymnia duplicata*, *Lobaria linita*) where the PNV base maps have been completed in the Forest Plan area. Micro-site habitat modeling, using expert based knowledge is on-going for several species (including *Pseudocyphellaria rainierensis*, *Bridgeoporus nobillissimus*, *Rhizomnium nudum*, *Hemphillia malonei*). Habitat modeling is also occurring for two salamander species.

Species Specific Surveys – These surveys include those survey efforts that are unique surveys answering specific information needs. These surveys include radio telemetry work for red tree vole to answer connectivity concerns and seasonal movements, spotted owl pellet analysis as a surrogate for estimating red tree vole abundance, and some specific amphibian surveys.

Research – Research projects funded in 2002 included a study looking at the effectiveness of leave islands in projects to maintain known sites of Survey and Manage species and species hot spots in northern California. Some additional statistical analysis of GOBIG data was also completed in 2002.

2003 – 2004 Strategic Surveys

Strategic surveys for Survey and Manage species in 2003 and 2004 will emphasize conducting strategic surveys so that information needs for Category B species are answered prior to deadlines, responding to the needs of local administrative units, and begin completing strategic surveys for some species. Emphasis of which species will have strategic surveys conducted may depend on the outcome of the SEIS. The following strategies will be implemented with taxa groups listed in parentheses:

- Complete field surveys on random grid CVS/FIA plots (fungi, mollusks, and red tree vole),
- Complete data analysis of CVS/FIA random grid surveys (fungi, lichens, bryophytes, vascular plants, mollusks, and red tree vole),
- Conduct known site surveys to collect additional habitat data (lichens, bryophytes, vascular plants, and mollusks)
- Re-visit historic species locations to determine if species is still extant (fungi, bryophytes, and mollusks)
- Expand habitat modeling to include additional species and expand previous species models to Oregon and California (depending completion of development of potential natural vegetation base maps)
- Conduct purposive surveys with current regional contract to locate additional sites in reserve land use allocations (fungi, lichens, bryophytes, vascular plants, and mollusks)
- Verify the identification of previous voucher specimens (fungi)
- Develop a strategic survey strategy for arthropods.

- Species specific surveys for great gray owl, red tree vole, and amphibians.

Strategy for Completing Strategic Surveys (including Category B Species)

Strategic surveys will eventually be completed as information needs are answered, including those species that have ROD mandated deadlines (Category B species). Strategic surveys are to be completed for Category B lichens (8 species), bryophytes (8 species), and mollusks (4 species) by fiscal year 2006 and fungi (168 species) by fiscal year 2011. If these surveys are not completed then the agencies will be required to conduct equivalent-effort surveys in projects occurring in old-growth forests. When the Record of Decision was signed in 2001 there were 222 Category B species. Following the 2002 Annual Species Review there are currently 188 Category B species, a reduction of 34 species. It is expected that as more strategic (and pre-disturbance) survey data is collected and analyzed that the number of Category B species will continue to decrease.

The current strategy to collect information for Category B species has currently been the random grid survey, purposive surveys and known site surveys. The random grid survey and subsequent data analysis is anticipated to be completed in late 2003 or early 2004. It is anticipated (based on available random grid data) that some species (those with numerous detections) will be moved to a different category or removed from Survey and Manage. It is still expected that several Category B species will remain on the Survey and Manage list following the completion of this survey. Continuing strategic surveys for species will depend on the current information (number of sites, re-location ability of sites, and knowledge of potential habitat), and the costs to conduct these surveys and the anticipated amount of new information that may be collected from those surveys.

Figure 1 is a flow chart diagramming strategic survey efforts and or information needed to be collected before any one of the conditions describing when strategic surveys are met. See Appendix 1 for more description of when strategic surveys would be considered completed.

Strategic Surveys by Taxa Group

Appendices 2-7 are arranged by taxa group and provide a brief summary of known information for each Survey and Manage species; the species information needs that can be answered through strategic surveys; strategic survey methods and the benefits of conducting these surveys; and the survey priority. Category B species have an additional section outlining the strategy to complete surveys prior to ROD-mandated timelines. Budgetary constraints and other priorities in the Survey and Manage program may prevent work that is identified in this guide from being completed. Table 1 displays strategic surveys have been implemented for all Survey and Manage species.

Below is a summary of strategic survey efforts for each species/taxa group in calendar year 2003 and fiscal year 2004.

Fungi (Appendix 2)

Survey Strategies - Strategic surveys in 2003 – 2004 for fungi will emphasize the completion of the random grid surveys and the analysis of the data. Purposive surveys to attempt to locate additional sites will also occur on approximately 4,000 acres and re-visit historic species locations under a regional BLM contract that was awarded in 2002.

Fungi pose several dilemmas that make conducting strategic surveys difficult. The ephemeral nature of the fruiting bodies, the infrequency of the fruiting (i.e. some species may only appear once every 3-5+ years), the habit of the species (i.e. hypogeous, or underground fruiting fungi), the lack of ability to positively identify specimens in the field, and the difficulty in specimen identifications are some of the problems that make surveying for fungi difficult. These factors make conducting strategic surveys for fungi much more difficult than other taxa groups. In spite of these dilemmas much information has been collected from conducting strategic surveys for several fungi species.

Other types of strategic survey efforts, including purposive and known sites surveys have been attempted but with limited success, if one looks at success as finding new locations. For example, over 16,000 acres were surveyed for fungi in 2002 through purposive surveys. A total of 63 new locations were documented for 19 species (about 3 sites per species). The majority species surveyed for had no new locations found (Table 1). Negative survey data is important as this may confirm rarity for some species. Some rare fungi species have had numerous detections on the random grid survey while have been rarely detected from initial purposive surveys while other ones have been detected more from purposive surveys. One of the critical factors in making purposive surveys effective is knowledge of the species specific habitat needs. With most of the fungi our knowledge of their habitats is very general (e.g. most species the habitat is described as “coniferous forest”). As more locations of fungi are found more specific habitat may be able to be identified which would be used to target future surveys.

Known site surveys are difficult to conduct for fungi due to the ephemeral nature of the fruiting bodies, the inability to specifically re-locate the site where the specimen was collected, and the inability to determine the extent of the vegetative organism. These factors also make modeling of potential habitat a problem since it is not clear if we are collecting the actual species habitat information.

The main emphasis of the strategic survey effort for fungi will be to complete the random grid survey on CVS/FIA plots. This survey has made over 15,000 collections of fungi fruiting bodies resulting in over 1,000 detections of approximately 70 Survey and Manage species (approximately 120 species have not been detected). Data analysis of this survey will be critical in estimating the species abundance and association with late-successional/old-growth forests. The emphasis of purposive surveys will begin to re-visit locations of the species (approximately 80) that have not been observed since inception of the Northwest Forest Plan or with 5 or less known locations.

Collections made have been made recently in northern California for 15 species that have not been observed in many years. The Survey and Manage program plans on requesting the vouchers of these collections for additional identification from another taxa expert. Observing these specimens may provide insight on these species habitat and aid in our identification.

Future strategic surveys for the remaining species with numerous locations will most likely depend on the results of the random grid surveys (and subsequent reviews in the Annual Species Review). Species with numerous detections from the random grid may be subject to review through the Annual Species Review and additional strategic surveys would depend on the disposition of these species and additional information needs.

Benefits - The benefits of strategic surveys for fungi are the following:

- The random grid survey will provide abundance estimates for those Survey and Manage species with detections across the NWFP and for those species with numerous detections may also be able to test the species association with late-successional/old-growth forests.
- Historic site re-visits will attempt to re-locate species that have not been located since 1993.
- Verification of specimens collected from northern California will determine if these recent collections are actually Survey and Manage species.

Lichens (Appendix 3)

Survey Strategies - Strategic surveys for lichens will emphasize collecting information through the following survey methods; 1) estimate species abundance through completion of the random grid surveys and analysis of the data, 2) responding to field unit needs by prioritizing purposive surveys for selected species (*Ramalina thrausta*, *Pseudocyphellaria rainierensis*, *Platismatia lacunosa*, etc.) in high likely habitats within reserve land use allocations, 3) collection of habitat data through known site surveys, and 4) developing potential habitat maps using the Potential Natural Vegetation mapping (using data collected through known site surveys).

The field surveys and data analysis on CVS/FIA random grid have been completed and provided to the taxa team for the 2003 Annual Species Review. Analysis of the data collected from this survey will be to determine if additional statistically based sampling methods should be developed to answer species information needs.

Purposive surveys will continue throughout the region with contract and agency crews conducting surveys in high likely habitat. Over 13,000 acres are expected to surveyed through purposive surveys.

Habitat modeling will be expanded into Oregon not that the baseline vegetation maps have been completed. Habitat data collected in 2003 will be used to develop potential habitat maps for *Pseudocyphellaria rainierensis*, *Hypogymnia duplicata*, *Ramalina thrausta*, *Platismatia lacunosa*, and *Nephroma occultum*. Data collected from these surveys would be used to develop potential habitat maps in 2004.

In addition to these survey efforts, some species specific surveys will be completed and data analyzed in 2003-2004. These include the coastal and aquatic lichen survey efforts. The final report for the coastal lichen is expected to be completed in 2003. Field surveys for the aquatic lichen survey will be completed in 2003 with analysis expected to be complete in 2004.

The 10 species of pin lichens pose several of the same survey issues as described in the fungi section. While these species can be observed year round, their small size (< 1 mm), difficulty in identification (i.e. only a few individuals can reliably identify them) makes these species problematic when conducting surveys. Pin lichens specimens are currently being collected while conducting purposive surveys and being sent off for identification.

Two lichen species (*Hypogymnia vittata* and *Nephroma isiodosum*) are currently not known to occur in the Northwest Forest Plan Area. These species have not been detected on the random grid survey. Purposive surveys will occur in high likely habitats within the Northwest Forest Plan.

Benefits – The benefits of information collected through strategic surveys for lichens are:

- The random grid survey will provide abundance estimates for all Survey and Manage species across the NWFP and for those species with numerous detections may also be able to test the species association with late-successional/old-growth forests.
- Purposive surveys in high likely habitat within reserves will locate new locations for targeted lichen species.
- Known site surveys will continue to collect habitat data that can be used to develop potential habitat maps and refine pre-disturbance survey protocols.
- Habitat modeling for selected species will develop potential habitat maps that can be used to target future strategic surveys.
- Completion of the coastal and aquatic lichen species will help determine abundance and distribution information about these species.
- Surveys for the 2 lichen species not currently known from the Northwest Forest Plan area will help answer if these species actually occur in the planning area.

Bryophytes (Appendix 4)

Survey Strategies – The random grid survey for bryophytes are complete and data is currently being analyzed. Five bryophyte species currently on the Survey and Manage list were detected on this survey while ten were not detected. The reasons for non-detection is most likely a result of a combination of the following factors; their small size making them difficult to detect in the field, and/or they occur on specialized habitats and substrates, which themselves are rare on the landscape.

Seven species (*Brotherella roellii*, *Herbertus aduncus*, *Kurzia makinoana*, *Marsupella emarginata*, *Orthodontium gracile*, *Tritomaria exsectiformis*, *Tritomaria quinquentata*) had no detections on the random grid and are known from very few locations within the Northwest Forest Plan. One species, *Brotherella roellii*, has not been collected in the Northwest Forest Plan area for almost 100 years. Surveys for these species will focus on surveying the historic locations to attempt to re-locate these species. If historic locations are found then additional surveys in the vicinity of these locations will occur.

Purposive surveys will continue for some species in selected areas to fill information needs. Surveys for *Diplophyllum plicatum*, on the Siuslaw National Forest will occur to attempt to locate additional sites in high likely habitat to fill the gap between the locations in the southern Oregon Coast Range and Olympic Peninsula. Additional purposive surveys will occur in northern California for *Ptilidium californicum* and *Buxbaumia viridis*.

Additional habitat data will be collected through known site surveys for *Tetraphis geniculata*, *Schistostega pennata*, *Racomitrium aquaticum*, *Ptilidium californicum* (California), *Iwatsukiella leucotricha*, and *Rhizomnium nudum* (Oregon). Information from these surveys will be used to characterize the habitats of these species to target future strategic surveys, and be used to develop potential habitat maps.

Benefits – The benefits of strategic surveys for bryophytes are:

- Completing the analysis of the random grid survey will provide abundance estimates and tests of association with habitats for those species with enough detections.
- Historic site revisits will attempt to relocate species that have not been collected since 1993. If these species are relocated then some additional habitat data can be collected.
- Purposive surveys for selected bryophyte species will answer specific information needs about habitat and distribution within the Northwest Forest Plan area.
- Collecting habitat data through known site surveys will provide data that can be used to assess habitat associations and develop potential habitat maps.

Vascular Plants (Appendix 5)

Survey Strategies – Since there were only three detections of vascular plant species on the random grid survey not much analysis of species abundance and association with LSO habitat can be made. The lack of detections from this survey are most likely a result of a combination of the following; 1) conducting surveys at times when vascular plants were not identifiable, 2) the coarse scale of the surveyed plots; and 3) the rarity of the species.

The collection of information from strategic surveys in 2003 will include the following strategies:

- Completion of habitat models for *Coptis asplenifolia* and *Plantanthera orbiculata* and submitting the final results and maps to the Survey and Manage program. Habitat models may also begin for other vascular plant species that have had known site surveys completed.
- Purposive surveys in high likely habitats for *Bensoniella oregana*, *Botrychium montanum*, *Botrychium minganense*, *Coptis trifolia*, and *Corydalis aquae-gelidae*.
- Known site surveys will occur for the two *Botrychium* species, *Coptis trifolia* and possibly *Eucephalis vialis*.
- Surveys for the parasitic *Arceuthobium tsugense* var. *mertensiana* will include a mapping of the mountain hemlock plant series and overlaying it with the reserve network and reviewing literature to determine this species association with mountain hemlock.

Benefits – The benefits of these surveys will answer questions such as species distribution and habitat associations. In addition, purposive surveys may be more effective since for some species where the habitats are relatively well known (when compared with other taxa groups).

Arthropods (Appendix 6)

Survey Strategies – The most pressing information need for arthropods is to determine if these four species guilds meet the three Survey and Manage criteria. Previous research has been conducted looking at species composition and selected ecosystem function of these guilds in southwest Oregon and northern California. A meeting was recently held in Portland to summarize and synthesize this previous research and to determine future information needs for arthropods.

Benefits – The benefit of this arthropod meeting identified what previous work had been accomplished for arthropods and it was decided to put these four species guilds through an Annual Species Review to determine if Survey and Manage can provide the appropriate management for these groups. From the Annual Species Review the information needs for arthropods will be clearly articulated and strategic surveys can be designed to answer these questions.

Mollusks (Appendix 7)

Survey Strategies – Strategic surveys for mollusks will collect information to answer a variety of questions. Many mollusk species are restricted to narrow geographic ranges and have specific habitat requirements. The following strategic survey work for mollusks is:

- Complete field surveys on CVS random grid survey, specimen identification/verification, and data analysis.
- Continue genetic work to determine taxonomy of *Hemphillia burringtoni* and *H. glandulosa*.
- Revisit known sites to determine if species is still extant, collect habitat data and collect voucher specimens at those locations where no vouchers have been collected.
- For those species with no locations on federal ownerships conduct surveys on high likely habitat on federal lands.

Benefits – The benefits of these surveys will answer a variety of questions such as:

- Does the species occur on federal land ownerships within the Northwest Forest Plan area?
- What are the habitat requirements of Survey and Manage mollusk species.
- Collection of voucher specimens from known sites without vouchers will document these locations that can be used to better understand the species distribution and range in the Northwest Forest Plan area.
- Information from known site surveys can be used to model potential habitat.

Amphibians (Appendix 8)

Survey Strategies – Strategic surveys for amphibians in 2003 and 2004 will focus on completing work for Larch Mountain, Van Dyke, and Siskiyou Mountain salamanders. No strategic surveys are currently planned for Shasta salamander in 2003.

Surveys for Van Dyke and Larch Mountain salamanders will focus on a stratified random sample in high and low likely habitat to validate (and complete) the species habitat model. In addition, a database has been developed to analyze the detection rates of Larch Mountain salamanders while conducting pre-disturbance surveys. This information will be used in developing a habitat model.

Information needs for Siskiyou Mountain salamanders differs between the two portions of the species range. In the southern portion of the range strategic surveys will use a stratified random approach within reserve and matrix lands to examine occupancy, habitat, and distribution. In the northern portion of the range purposive surveys will occur in an attempt to fill in gaps of the species distribution. If funding and time permit some additional random surveys may occur to validate the current model. In addition, tissue samples will be collected from specimens captured and be used for an ongoing genetic study at Oregon State University.

Benefits – The benefits to these strategic surveys for amphibians include:

- More detailed habitat information can be used to refine pre-disturbance survey protocols so that surveys only occur in potential habitat.
- Random surveys will provide estimates of species abundance across different land use allocations.
- Habitat models that identify high likely habitat can also be used to refine pre-disturbance survey protocols.
- Purposive surveys for Siskiyou Mountain salamander will fill in much needed information gaps about this species distribution in the northern range.

Great Gray Owl (Appendix 8)

Survey Strategies – Strategic surveys for great gray owl are scheduled to begin in 2003 with the initiation of a radio telemetry study to determine home range characteristics and habitat use within the Siskiyou Mountains and in the Oregon Cascades on the Willamette National Forest.

Benefits – This radio telemetry study will provide data on great gray owl habitat uses and the size of their home range. This information is needed to develop effective management recommendations and identify more specific habitat requirements that may be used to refine pre-disturbance survey protocols.

Red Tree Vole (Appendix 8)

Survey Strategies – Strategic survey strategies for red tree vole will emphasize collecting information to estimate the species abundance and association with late-successional/old-growth forests through a statistically based survey on randomly selected CVS plots throughout the species range. The field surveys are expected to be completed by the end of the 2003 with data analysis completed prior to the 2004 Annual Species Review Process. This survey is approximately 50% complete with most of the emphasis in southern Oregon.

In addition a radio telemetry study was funded to determine this species home range and seasonal movements. This survey will help address the connectivity question about this species and dispersal ability. Also, previously funded projects need be completed and final reports submitted to the Strategic Survey Coordinator.

Benefits – The benefits of these strategic surveys for red tree vole will provide a range wide estimation of abundance and association with late-successional/old-growth forests similar to the random grid survey. The telemetry study will provide information about the red tree vole dispersal capabilities and possibly provide insight to this species connectivity questions.

Summary

Since the inception of strategic surveys much knowledge has been acquired for many Survey and Manage species that have resulted in changing management categories or removing the species from Survey and Manage. Information about species abundance, distribution and association with late-successional/old-growth habitats has been collected and allowed for more informed management decisions. Completion of the random grid survey and data analysis will provide taxa experts and managers scientifically based information to make informed decisions for many species. This survey in combination with other efforts (known site surveys, habitat modeling, stratified random sampling, purposive surveys, species specific surveys, etc.) will provide a framework for additional surveys needs for those species remaining on the Survey and Manage list.

In the next couple of years strategic surveys will evolve into a more focused program collecting more fine scale information needs. The reason for the initial focus for a coarse scale survey was because our knowledge about most of these species was so limited. As we have gathered information about species our specific information needs have changed and become more focused.

Strategic surveys are at a point where surveys may begin to be considered completed for many species. A decision will be made to determine how long strategic surveys for species should be funded. Information considered will include survey costs with the species information needs and anticipated amount of information that will be collected from the surveys. For example we could survey for many more years for a rare species, such as the bryophyte *Kurzia makinoana*, and not collect additional information needed to make a significant change in our knowledge of the species to make informed management decisions.

In summary, strategic surveys have set an example of how to collect vast amounts of knowledge for multiple species (many that are difficult to detect or identify) across a large and varied landscape. Completing ongoing surveys and their subsequent data analysis is critical in the decision making process.

Table 1. Status of Strategic Survey Efforts for all Survey and Manage Species.

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
FUNGI									
<i>Acanthophysium farlowii</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Albatrellus avellaneus</i>	B	4	2001	random grid (0)	Needed	incidental/1	0	none	none
<i>Albatrellus caeruleoporus</i>	B	9	2001	random grid (1)	Needed	0/0	0	none	none
<i>Albatrellus ellisii</i>	B	43	2002	random grid (0)	N/A	0/0	0	none	none
<i>Albatrellus flettii</i>	B	60	2001	random grid (0)	N/A	500/12	0	none	none
<i>Alpova alexsmithii</i>	B	9	2002	random grid (0)	Needed	0/0	0	none	none
<i>Alpova olivaceotinctus</i>	B	2	2001	random grid (1)	Needed	0/0	0	none	none
<i>Arcangeliella camphorata</i>	B	9	2001	random grid (1)	Needed	0/0	0	none	none
<i>Arcangeliella crassa</i>	B	3	1983	random grid (0)	Needed	0/0	0	none	none
<i>Arcangeliella lactarioides</i>	B	5	1999	random grid (0)	Needed	0/0	0	none	none
<i>Asterophora lycoperdoides</i>	B	4	1996	random grid (0)	Needed	0/0	0	none	none
<i>Asterophora parasitica</i>	B	5	1989	random grid (0)	Needed	0/0	0	none	none
<i>Baeospora myriadophylla</i>	B	17	1994	random grid (0)	Needed	0/0	0	none	none
<i>Balsamia nigrens</i>	B	5	1986	random grid (0)	Needed	0/0	0	none	none
<i>Boletus haematinus</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Boletus pulcherrimus</i>	B	13	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Bondarzewia mesenterica</i>	B	100+	2002	random grid (0)	Needed	incidental/2	1	none	none
<i>Bridgeoporus nobilissimus</i>	A	59	2002	random grid (0)	Needed	0/0	0	PNV/BBN	none
<i>Cantharellus subalbidus</i>	D	50	2002	random grid (34)	N/A	0/0	0	none	none
<i>Catathelasma ventricosa</i>	B	15	1999	random grid (0)	Needed	0/0	0	none	none
<i>Chalciporus piperatus</i>	D	100+	2002	random grid (0)	N/A	0/0	0	none	none
<i>Chamonixia caespitosa</i>	B	5	2002	random grid (2)	Needed	0/0	0	none	none
<i>Choiromyces alveolatus</i>	B	8	2002	random grid (1)	Needed	0/0	0	none	none
<i>Choiromyces venosus</i>	B	2	1999	random grid (0)	Needed	0/0	0	none	none
<i>Chroogomphus loculatus</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Chrysomphalina grossula</i>	B	14	2002	random grid (2)	Needed	incidental/1	0	none	none
<i>Clavariadelphus ligula</i>	B	~50	2002	random grid (4)	N/A	incidental/1	0	none	none
<i>Clavariadelphus occidentalis</i>	B	72	2002	random grid (0)	N/A	incidental/1	0	none	none
<i>Clavariadelphus sachalinensis</i>	B	35	1999	random grid (0)	N/A	0/0	0	none	none
<i>Clavariadelphus subfastigiatus</i>	B	5	2002	random grid (0)	Needed	incidental/1	0	none	none

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
<i>Clavariadelphus truncatus</i>	D	100+	2002	random grid (2)	N/A	incidental/5	0	none	none
<i>Clavulina castanopes v. lignicola</i>	B	10	2002	random grid (8)	N/A	0/0	candidate	candidate	none
<i>Clitocybe senilis</i>	B	~10	2002	random grid (3)	Needed	incidental/1	0	none	none
<i>Clitocybe subditopoda</i>	B	5	1999	random grid (0)	Needed	0/0	0	none	none
<i>Collybia bakerensis</i>	B	100+	2002	random grid (2)	N/A	734/2	0	none	none
<i>Collybia racemosa</i>	B	30	1999	random grid (0)	Needed	0/0	0	none	none
<i>Cordyceps ophioglossoides</i>	B	<20	2002	random grid (1)	Needed	0/0	0	none	none
<i>Cortinarius barlowensis</i>	B	5	2002	random grid (17)	N/A	3571/1	candidate	candidate	none
<i>Cortinarius boulderensis</i>	B	7	2002	random grid (6)	Needed	3571/0	0	none	none
<i>Cortinarius cyanites</i>	B	9	2002	random grid (2)	Needed	3571/0	0	none	none
<i>Cortinarius depauperatus</i>	B	5	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius magnivelatus</i>	B	9	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius olympianus</i>	B	40	2002	random grid (4)	N/A	3571/3	0	none	none
<i>Cortinarius speciosissimus</i>	B	4	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius tabularis</i>	B	0	NA	random grid (0)	N/A	3571/0	0	none	none
<i>Cortinarius umidicola</i>	B	1	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius valgus</i>	B	2	1999	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius variipes</i>	B	5	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Cortinarius verrucisporus</i>	B	2	2000	random grid (1)	Needed	3571/0	0	none	none
<i>Cortinarius wiebeae</i>	B	1	2002	random grid (0)	Needed	3571/0	0	none	none
<i>Craterellus tubaeformis</i>	D	400+	2002	random grid (56)	N/A	incidental/5	0	none	none
<i>Cudonia monticola</i>	B	20	2000	random grid (7)	N/A	0/0	candidate	candidate	none
<i>Cyphellostereum laeve</i>	B	3	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Dermocybe humboldtensis</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Destuntzia fusca</i>	B	3	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Destuntzia rubra</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Dichostereum boreale</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Elaphomyces anthracinus</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Elaphomyces subviscidus</i>	B	2	2002	random grid (2)	Needed	0/0	0	none	none
<i>Endogone acrogena</i>	B	3	1968	random grid (0)	Needed	0/0	0	none	none
<i>Endogone oregonensis</i>	B	7	1983	random grid (0)	Needed	0/0	0	none	none
<i>Entoloma nitidum</i>	B	<10	2002	random grid (2)	Needed	0/0	0	none	none

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<i>Fayodia bisphaerigera</i>	B	14	1993	random grid (0)	Needed	0/0	0	none	none
<i>Fevansia aurantiaca</i>	B	2	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Galerina atkinsoniana</i>	B	50+	2002	random grid (44)	N/A	0/0	0	none	none
<i>Galerina cerina</i>	B	50+	2002	random grid (9)	N/A	0/0	0	none	none
<i>Galerina heterocystis</i>	E	50+	2002	random grid (12)	N/A	0/0	candidate	candidate	none
<i>Galerina sphagnicola</i>	E	0	NA	random grid (0)	N/A	0/0	0	none	none
<i>Gastroboletus imbellus</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gastroboletus ruber</i>	B	25	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gastroboletus subalpinus</i>	B	40	1999	random grid (0)	N/A	0/0	0	none	none
<i>Gastroboletus turbinatus</i>	B	15+	2000	random grid (0)	Needed	0/0	0	none	none
<i>Gastroboletus vividus</i>	B	5	1999	random grid (0)	Needed	0/0	0	none	none
<i>Gastrosuillus amaranthii</i>	E	0	NA	random grid (0)	N/A	0/0	0	none	none
<i>Gastrosuillus umbrinus</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gautieria magnicellaris</i>	B	2	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gautieria otthii</i>	B	2	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gelatinodiscus flavidus</i>	B	5	2002	random grid (1)	Needed	94/2	1	none	none
<i>Glomus radiatum</i>	B	3	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Gomphus bonarii</i>	B	80	2000	random grid (0)	N/A	0/0	0	none	none
<i>Gomphus clavatus</i>	F	96	2002	random grid (10)	N/A	incidental/7	2	candidate	none
<i>Gomphus kauffmanii</i>	E	54	2002	random grid (1)	N/A	0/0	1	none	none
<i>Gymnomyces abietis</i>	B	15	1994	random grid (0)	Needed	0/0	0	none	none
<i>Gymnomyces nondistincta</i>	B	1	1965	random grid (0)	Needed	0/0	0	none	none
<i>Gymnopilus punctifolius</i>	B	<10	2002	random grid (1)	N/A	incidental/1	0	none	none
<i>Gyromitra californica</i>	B	22	2001	random grid (0)	N/A	0/0	3	none	none
<i>Hebeloma olympianum</i>	B	5	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Helvella crassitunicata</i>	B	20	2000	random grid (0)	Needed	0/0	0	none	none
<i>Helvella elastica</i>	B	36	2002	random grid (4)	N/A	0/0	0	none	none
<i>Hydnotrya inordinata</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Hydnotrya subnix</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Hydropus marginellus</i>	B	~10	2002	random grid (1)	Needed	690/0	0	none	none
<i>Hygrophorus caeruleus</i>	B	6	1998	random grid (0)	Needed	690/0	0	none	none
<i>Hygrophorus karstenii</i>	B	0	NA	random grid (0)	N/A	0/0	0	none	none

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<i>Hygrophorus vernalis</i>	B	4	pre-1993	random grid (0)	Needed	637/0	0	none	none
<i>Hypomyces luteovirens</i>	B	11	1996	random grid (0)	Needed	0/0	0	none	none
<i>Leucogaster citrinus</i>	B	2	2002	random grid (21)	N/A	0/0	candidate	candidate	none
<i>Leucogaster microsporus</i>	B	11	2002	random grid (3)	Needed	0/0	0	none	none
<i>Macowanites chlorinosmus</i>	B	12	1992	random grid (0)	Needed	0/0	0	none	none
<i>Macowanites lymanensis</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Macowanites mollis</i>	B	2	1989	random grid (0)	Needed	0/0	0	none	none
<i>Marasmius applanatipes</i>	B	2	2002	random grid (2)	Needed	0/0	0	none	none
<i>Martellia fragrans</i>	B	3	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Martellia idahoensis</i>	B	1	2002	random grid (1)	Needed	0/0	0	none	none
<i>Mycena hudsoniana</i>	B	7	2002	random grid (2)	Needed	723/0	0	none	none
<i>Mycena overholtsii</i>	D	100+	2002	random grid (1)	N/A	723/11	27	candidate	none
<i>Mycena quinaultensis</i>	B	21	2000	random grid (0)	Needed	0/0	0	none	none
<i>Mycena tenax</i>	B	20	2002	random grid (11)	N/A	0/0	candidate	candidate	none
<i>Mythicomyces corneipes</i>	B	9	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Neolentinus adhaerens</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Neolentinus kauffmanii</i>	B	~25	2002	random grid (1)	Needed	0/0	0	none	none
<i>Nivatogastrium nubigenum</i>	B	200+	2002	random grid (0)	N/A	incidental/4	3	none	none
<i>Octavianina cyanescens</i>	B	1	2002	random grid (1)	Needed	0/0	0	none	none
<i>Octavianina macrospora</i>	B	1	1937	random grid (0)	Needed	0/0	0	none	none
<i>Octavianina papyracea</i>	B	2	1956	random grid (0)	Needed	0/0	0	none	none
<i>Otidea leporina</i>	D	70+	2002	random grid (3)	N/A	0/0	0	none	none
<i>Otidea smithii</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Phaeocollybia attenuata</i>	D	100+	2002	random grid (2)	N/A	2371/2	0	none	none
<i>Phaeocollybia californica</i>	B	~20	2001	random grid (0)	Needed	2371/0	0	none	none
<i>Phaeocollybia dissiliens</i>	B	10+	2001	random grid (0)	N/A	2371/0	0	none	none
<i>Phaeocollybia fallax</i>	D	91	2002	random grid (1)	N/A	2371/3	0	none	none
<i>Phaeocollybia gregaria</i>	B	2	1999	random grid (0)	Needed	2371/0	0	none	none
<i>Phaeocollybia kauffmanii</i>	D	200+	2001	random grid (0)	N/A	2371/1	0	none	none
<i>Phaeocollybia olivacea</i>	E/F	100+	2001	random grid (0)	N/A	2371/0	0	none	none
<i>Phaeocollybia oregonensis</i>	B	6	2001	random grid (0)	Needed	2371/0	0	none	none
<i>Phaeocollybia piceae</i>	B	40	2001	random grid (0)	N/A	2371/0	0	none	none

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<i>Phaeocollybia pseudofestiva</i>	B	~40	2001	random grid (0)	N/A	2371/0	0	none	none
<i>Phaeocollybia scatesiae</i>	B	15	2002	random grid (0)	N/A	2371/1	0	none	none
<i>Phaeocollybia sipei</i>	B	10+	2002	random grid (2)	N/A	2371/0	0	none	none
<i>Phaeocollybia spadicea</i>	B	100+	2002	random grid (3)	N/A	2371/2	0	none	none
<i>Phellodon atratus</i>	B	28	2000	random grid (0)	N/A	0/0	0	none	none
<i>Pholiota albivelata</i>	B	28	1999	random grid (0)	Needed	0/0	0	none	none
<i>Podostroma alutaceum</i>	B	5	2002	random grid (1)	Needed	0/0	0	none	none
<i>Polyozellus multiplex</i>	B	59	2000	random grid (0)	N/A	0/0	6	none	none
<i>Pseudaleuria quinaultiana</i>	B	5	1993	random grid (0)	Needed	0/0	0	none	none
<i>Ramaria abietina</i>	B	6	2002	random grid (1)	Needed	3571/0	0	none	none
<i>Ramaria amyloidea</i>	B	20	2002	random grid (0)	N/A	3571/2	0	none	none
<i>Ramaria araiospora</i>	B	80	2002	random grid (11)	N/A	3571/5	candidate	candidate	none
<i>Ramaria aurantiisiccescens</i>	B	30+	1999	random grid (0)	N/A	3571/0	0	none	none
<i>Ramaria botryis</i> var. <i>aurantiiramosa</i>	B	9	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria celerivirescens</i>	B	58	2002	random grid (7)	N/A	3571/14	candidate	candidate	none
<i>Ramaria claviramulata</i>	B	2	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria concolor</i> f. <i>marrii</i>	B	2	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria concolor</i> f. <i>tsugina</i>	B	3	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria conjunctipes</i> v. <i>sparsiramosa</i>	B	~10	2000	random grid (0)	Needed	3571/2	0	none	none
<i>Ramaria coulterae</i>	B	10	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria cyaneigranosa</i>	B	22	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria gelatiniaurantia</i>	B	8	2002	random grid (1)	Needed	3571/5	0	none	none
<i>Ramaria gracilis</i>	B	4	2002	random grid (1)	Needed	3571/0	0	none	none
<i>Ramaria hiliaris</i> v. <i>olympiana</i>	B	1	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria largentii</i>	B	12+	2000	random grid (0)	Needed	3571/1	0	none	none
<i>Ramaria lorithamnus</i>	B	1	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria maculatipes</i>	B	~10	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria rainierensis</i>	B	2	2000	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria rubella</i> var. <i>blanda</i>	B	1	2002	random grid (2)	Needed	3571/0	0	none	none
<i>Ramaria rubibrunnescens</i>	B	9	2002	random grid (2)	Needed	3571/0	0	none	none
<i>Ramaria rubrievanescens</i>	B	39	2002	random grid (5)	N/A	3571/1	3	none	none
<i>Ramaria rubripermanens</i>	B/D	150+	2002	random grid (2)	N/A	3571/5	1	none	none

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<i>Ramaria spinulosa</i> var. <i>diminutiva</i>	B	2	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria stuntzii</i>	B	80+	2002	random grid (1)	N/A	3571/3	0	none	none
<i>Ramaria suecica</i>	B	2	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria thiersii</i>	B	1	pre-1993	random grid (0)	Needed	3571/0	0	none	none
<i>Ramaria verlotensis</i>	B	2	1982	random grid (0)	Needed	3571/0	0	none	none
<i>Rhizopogon abietis</i>	B	6	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Rhizopogon atroviolaceus</i>	B	4	2002	random grid (1)	Needed	0/0	0	none	none
<i>Rhizopogon brunneiniger</i>	B	4	1988	random grid (0)	Needed	0/0	0	none	none
<i>Rhizopogon chamaleontinus</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Rhizopogon ellipsosporus</i>	B	2	2002	random grid (1)	Needed	0/0	0	none	none
<i>Rhizopogon evadens</i> var. <i>subalpinus</i>	B	18	2002	random grid (1)	Needed	0/0	0	none	none
<i>Rhizopogon exiguus</i>	B	5	2002	random grid (1)	Needed	0/0	0	none	none
<i>Rhizopogon flavofibrillosus</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Rhizopogon inquinatus</i>	B	2	1980	random grid (0)	Needed	0/0	0	none	none
<i>Rhizopogon truncatus</i>	D	~40	2002	random grid (9)	N/A	0/0	candidate	candidate	none
<i>Rhodocybe speciosa</i>	B	2	2002	random grid (1)	Needed	0/0	0	none	none
<i>Rickenella swartzii</i>	B	8	2000	random grid (0)	Needed	0/0	0	none	none
<i>Russula mustelina</i>	B	4	1989	random grid (0)	Needed	0/0	0	none	none
<i>Sarcodon fuscoindicus</i>	B	25	2002	random grid (5)	Needed	0/0	0	none	none
<i>Sedecula pulvinata</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Sowerbyella rhenana</i>	B	20+	1999	random grid (0)	N/A	0/0	0	none	none
<i>Sparassis crispa</i>	D	70+	2002	random grid (1)	N/A	incidental/3	1	none	none
<i>Spathularia flavida</i>	B	39	2002	random grid (9)	N/A	0/0	candidate	candidate	none
<i>Stagnicola perplexa</i>	B	8	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Thaxterogaster pavelekii</i>	B	9	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Tremiscus helvelloides</i>	D	73	2002	random grid (3)	N/A	527/1	0	none	none
<i>Tricholoma venenatum</i>	B	1	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Tricholomopsis fulvescens</i>	B	4	pre-1993	random grid (0)	Needed	0/0	0	none	none
<i>Tuber asa</i>	B	2	1970	random grid (0)	Needed	0/0	0	none	none
<i>Tuber pacificum</i>	B	2	1992	random grid (0)	Needed	0/0	0	none	none
<i>Tylopilus porphyrosporus</i>	D	28	pre-1993	random grid (0)	Needed	0/0	0	none	none

LICHENS

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
<i>Bryoria pseudocapillaris</i>	A	23	2000	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Bryoria spiralifera</i>	A	61	2000	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Bryoria subcana</i>	B	22	2002	random grid (2)	N/A	0/0	0	none	Coastal lichen survey
<i>Buellia oidealea</i>	E	<10	2002	random grid (1)	N/A	0/0	0	none	Coastal lichen survey
<i>Calicium abietinum</i>	B	9	2000	random grid (0)	Needed	0/0	0	none	
<i>Calicium adspersum</i>	E	3	pre-1993	random grid (0)	N/A	0/0	0	none	
<i>Cetrelia cetrarioides</i>	E	49	2002	random grid (2)	N/A	0/0	0	none	
<i>Chaenotheca chrysocephala</i>	B	22	2002	random grid (12)	N/A	260/4	0	none	
<i>Chaenotheca ferruginea</i>	B	13	2002	random grid (1)	N/A	260/4	0	none	
<i>Chaenotheca furfuracea</i>	F	43	2002	random grid (25)	N/A	260/1	0	none	
<i>Chaenotheca subroscida</i>	E	unknown	2002	random grid (4)	N/A	0/0	0	none	
<i>Chaenothecopsis pusilla</i>	E	unknown	2002	random grid (3)	N/A	0/0	0	none	
<i>Cladonia norvegica</i>	B	16	2002	random grid (37)	N/A	0/0	0	none	
<i>Collema nigrescens</i>	F	474	2002	random grid (19)	N/A	0/0	0	none	
<i>Dendriticocaulon intricatum</i>	A/E	16/531	2002	random grid (3)	N/A	204/2	2	none	
<i>Dermatocarpon luridum</i>	E	16	2001	random grid (0)	N/A	0/0	0	none	Aquatic survey
<i>Heterodermia sitchensis</i>	E	1	2002	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Hypogymnia duplicata</i>	C	70	2002	random grid (8)	N/A	940/9	81	PNV	
<i>Hypogymnia vittata</i>	E	0	N/A	random grid (0)	N/A	0/0	0	none	
<i>Hypotrachyna revoluta</i>	E	6	2001	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	E	1	2002	random grid (1)	N/A	0/0	0	none	
<i>Leptogium cyanescens</i>	A	11	2002	random grid (6)	N/A	0/0	0	none	
<i>Leptogium rivale</i>	E	55	2002	random grid (0)	N/A	0/0	0	none	Aquatic survey
<i>Leptogium teretiusculum</i>	E	8	2002	random grid (3)	N/A	0/0	0	none	
<i>Lobaria linita</i>	A	149	2002	random grid (12)	complete (CA)	360/7	51	PNV	
<i>Lobaria oregana</i>	A	7	2002	random grid (119)	N/A	1182/5	0	none	
<i>Microcalicium arenarium</i>	B	1	pre-1993	random grid (0)	N/A	0/0	0	none	
<i>Nephroma bellum</i> ,	E	173	2002	random grid (29)	N/A	0/0	0	none	
<i>Nephroma isidiosum</i>	E	0	N/A	random grid (0)	N/A	0/0	0	none	
<i>Nephroma occultum</i>	A	150	2002	random grid (4)	N/A	845/1	33	candidate	
<i>Niebla cephalota</i>	A	18	2001	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Pannaria rubiginosa</i>	E	15	2001	random grid (0)	N/A	0/0	0	none	Coastal lichen survey

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
<i>Pannaria saubinetii</i>	F	100+	2000	random grid (0)	N/A	0/0	0	none	
<i>Peltigera pacifica</i>	E	92	2002	random grid (12)	N/A	0/0	1	none	
<i>Platismatia lacunosa</i>	E	96	2002	random grid (20)	N/A	1010/7	13	candidate	
<i>Pseudocyphellaria perpetua</i>	B	<10	2002	random grid (1)	N/A	0/0	2	none	
<i>Pseudocyphellaria rainierensis</i>	A	165	2002	random grid (6)	N/A	1170/6	77	PNV	
<i>Ramalina thrausta</i>	A	136	2002	random grid (15)	N/A	5/1	22	candidate	
<i>Stenocybe clavata</i>	E	unknown	2002	random grid (4)	N/A	0/0	0	none	
<i>Teloschistes flavicans</i>	A	18	2001	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Tholurna dissimilis</i>	B	3	2002	random grid (1)	N/A	0/0	0	none	
<i>Usnea hesperina</i>	E	24	2001	random grid (0)	N/A	0/0	0	none	Coastal lichen survey
<i>Usnea longissima</i>	A/F	26	2002	random grid (13)	N/A	1624/3	10	none	
BRYOPHYTES									
<i>Brotherella roellii</i>	E	5	1913	random grid (0)	needed	6/0	0	none	none
<i>Buxbaumia viridis</i>	E	3	1999	random grid (19)	N/A	100/1	0	none	none
<i>Diplophyllum plicatum</i>	B	80	2002	random grid (1)	N/A	80/2	14	candidate	none
<i>Herbertus aduncus</i>	E	9	2002	random grid (0)	N/A	260/2	0	none	none
<i>Iwatsukiella leucotricha</i>	B	7	2002	random grid (0)	N/A	200/6	0	none	none
<i>Kurzia makinoana</i>	B	4	pre-1993	random grid (0)	needed	0/0	0	none	none
<i>Marsupella emarginata v. aquatica</i>	B	2	2002	random grid (0)	N/A	50/1	0	none	none
<i>Orthodontium gracile</i>	B	20+	1999	random grid (0)	N/A	0/0	0	none	none
<i>Ptilidium californicum</i>	A	228	2002	random grid (180)	N/A	2625/81	7	none	none
<i>Racomitrium aquaticum</i>	E	28	2001	random grid (6)	N/A	225/9	0	none	none
<i>Rhizomnium nudum</i>	B	16	2002	random grid (23)	N/A	2000/10	51	candidate	none
<i>Schistostega pennata</i>	A	60+	2002	random grid (0)	N/A	2200/14	51	candidate	none
<i>Tetraphis geniculata</i>	A	57	2002	random grid (1)	N/A	600/0	29	candidate	none
<i>Tritomaria exsectiformis</i>	B	15	2001	random grid (0)	N/A	1500/0	10	candidate	none
<i>Tritomaria quinqueidentata</i>	B	12	2001	random grid (0)	N/A	1500/2	2	none	none
VERTEBRATES									
Larch Mountain salamander	A	128	2002	Stratified random survey	N/A	none	0	Crisafulli work	none
Shasta salamander	A	~50	2002	random survey	N/A	completed	0	none	none
Siskiyou Mountains salamander	A/D	30/140	2002	Stratified random survey	N/A	on-going	0	none	none
Van Dyke's salamander	A	~40	2000	Stratified random survey	N/A	none	21	PNV	none

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
Great Gray Owl	A	114	2002	none	N/A	none	0	none	radio telemetry
Oregon Red Tree Vole	C/D	700	2002	random grid	N/A	none	0	PNV	radio telemetry
MOLLUSKS									
<i>Ancotrema voyanum</i>	E	100+	post-1993	GOBIG survey	N/A	0/0	0	PSW work	none
<i>Cryptomastix devia</i>	A	148	post-1993	random grid	N/A	157/1	0	none	none
<i>Cryptomastix hendersoni</i>	A	22	pre-1993	random grid	Needed	0/0	0	none	none
<i>Deroceras hesperium</i>	B	4	pre-1993	random grid	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 3	A	5	post-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 11	A	2	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 14	A	12	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 15	A	4	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 16	A	16	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 17	A	2	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 18	A	3	pre-1993	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 19	A	0	N/A	none	Needed	0/0	0	none	none
<i>Fluminicola</i> n. sp. 20	A	0	N/A	none	Needed	0/0	0	none	none
<i>Fluminicola seminalis</i>	A	15	pre-1993	none	Needed	0/0	0	none	none
<i>Helminthoglypta talmadgei</i>	A	761	post-1993	GOBIG survey	N/A	0/0	0	PSW work	none
<i>Hemphillia burringtoni</i>	E	~55	post-1993	random grid	N/A	0/0	0	none	genetic study
<i>Hemphillia glandulosa</i>	E	140	post-1993	random grid	N/A	157/2	0	none	genetic study
<i>Hemphillia malonei</i>	C	352	post-1993	random grid	N/A	157/4	60	PNV	none
<i>Hemphillia pantherina</i>	B	1	pre-1993	random grid	Needed	157/0	0	none	none
<i>Juga</i> (O.) n. sp. 2	A	4	pre-1993	random grid	Needed	0/0	0	none	none
<i>Juga</i> (O.) n. sp. 3	A	5	pre-1993	random grid	Needed	0/0	0	none	none
<i>Lyogyrus</i> n. sp. 1	A	61	post-1993	random grid	N/A	0/0	0	none	none
<i>Lyogyrus</i> n. sp. 2	A	2	pre-1993	random grid	Needed	0/0	0	none	none
<i>Lyogyrus</i> n. sp. 3	A	1	pre-1993	random grid	Needed	0/0	0	none	none
<i>Megomphix hemphilli</i>	A/F	~1000/~1000	post-1993	random grid	N/A	0/0	0	none	none
<i>Monadenia chaceana</i>	A	100	post-1993	random grid/GOBIG	N/A	0/0	0	PSW work	none
<i>Monadenia fidelis minor</i>	B	61	post-1993	random grid	N/A	0/0	34	candidate	none
<i>Monadenia infumata ochromphalus</i>	A	73	post-1993	GOBIG survey	N/A	0/0	0	PSW work	none
<i>Monadenia troglodytes troglodytes</i>	B	9	pre-1993	GOBIG survey	Needed	0/0	0	none	none

Species Name	Category	~# Known Sites (does not include random grid sites)	Last Obs	Statistical Surveys (# detections in NWFP)	Known Site Revisits	Purposive Surveys (acres/sites)	# KSS/Validation Surveys	Habitat Modeling	Other Survey Efforts
<i>Monadenia troglodytes wintu</i>	A	8	pre-1993	GOBIG survey	Needed	0/0	0	none	none
<i>Oreohelix</i> n. sp.	A	54	post-1993	random grid	Needed	0/0	0	none	none
<i>Pristiloma arcticum crateris</i>	A	90	post-1993	random grid	N/A	0/0	0	none	none
<i>Prophysaon coeruleum</i>	A	100	post-1993	random grid/GOBIG	N/A	0/0	0	none	none
<i>Trilobopsis roperi</i>	A	100+	post-1993	GOBIG survey	N/A	0/0	0	none	none
<i>Trilobopsis tehamana</i>	A	7	post-1993	GOBIG survey	Needed	0/0	0	none	none
<i>Vertigo</i> n. sp.	A	1	pre-1993	random grid	Needed	0/0	0	none	none
<i>Vespericola pressleyi</i>	A	21	post-1993	GOBIG survey	Needed	0/0	0	none	none
<i>Vespericola shasta</i>	A	78	post-1993	GOBIG survey	Needed	0/0	0	none	none
<i>Vorticifex</i> n. sp. 1	E	1	pre-1993	GOBIG survey	Needed	0/0	0	none	none
VASCULAR PLANTS									
<i>Arceuthobium tsugense mertensianae</i>	F	11	post-1993	random grid/0	none	0/0	0	none	habitat analysis
<i>Bensoniella oregana</i>	A	25	post-1993	random grid/0	none	0/0	0	none	none
<i>Botrychium minganense</i>	A	100+	post-1993	random grid/0	none	0/0	0	none	none
<i>Botrychium montanum</i>	A	68	post-1993	random grid/0	none	120/1	7	none	none
<i>Coptis asplenifolia</i>	A	13	post-1993	random grid/0	none	0/0	56	PNV	none
<i>Coptis trifolia</i>	A	2	pre-1993	random grid/0	Needed	0/0	0	none	none
<i>Corydalis aquae-gelidae</i>	A	100+	post-1993	random grid/0	none	25/0	0	none	none
<i>Cypripedium fasciculatum</i>	C/D	900+	post-1993	random grid/0	none	0/0	0	none	none
<i>Cypripedium montanum</i>	C/D	~400	post-1993	random grid/0	none	0/0	0	none	none
<i>Eucephalus vialis</i>	A	89	post-1993	random grid/0	none	0/0	0	none	none
<i>Galium kamtschaticum</i>	A	14	post-1993	random grid/0	none	0/0	3	none	none
<i>Platanthera orbiculata</i> var. <i>orbiculata</i>	C	150	post-1993	random grid/1	none	0/0	29	PNV	none
ARTHROPODS									
Canopy herbivores	F	N/A	N/A	none	N/A	N/A	N/A	N/A	PNW/PSW work
Coarse wood chewers	F	N/A	N/A	none	N/A	N/A	N/A	N/A	PNW/PSW work
Litter and soil dwelling species	F	N/A	N/A	none	N/A	N/A	N/A	N/A	PNW/PSW work
Understory and forest gap	F	N/A	N/A	none	N/A	N/A	N/A	N/A	PNW/PSW work

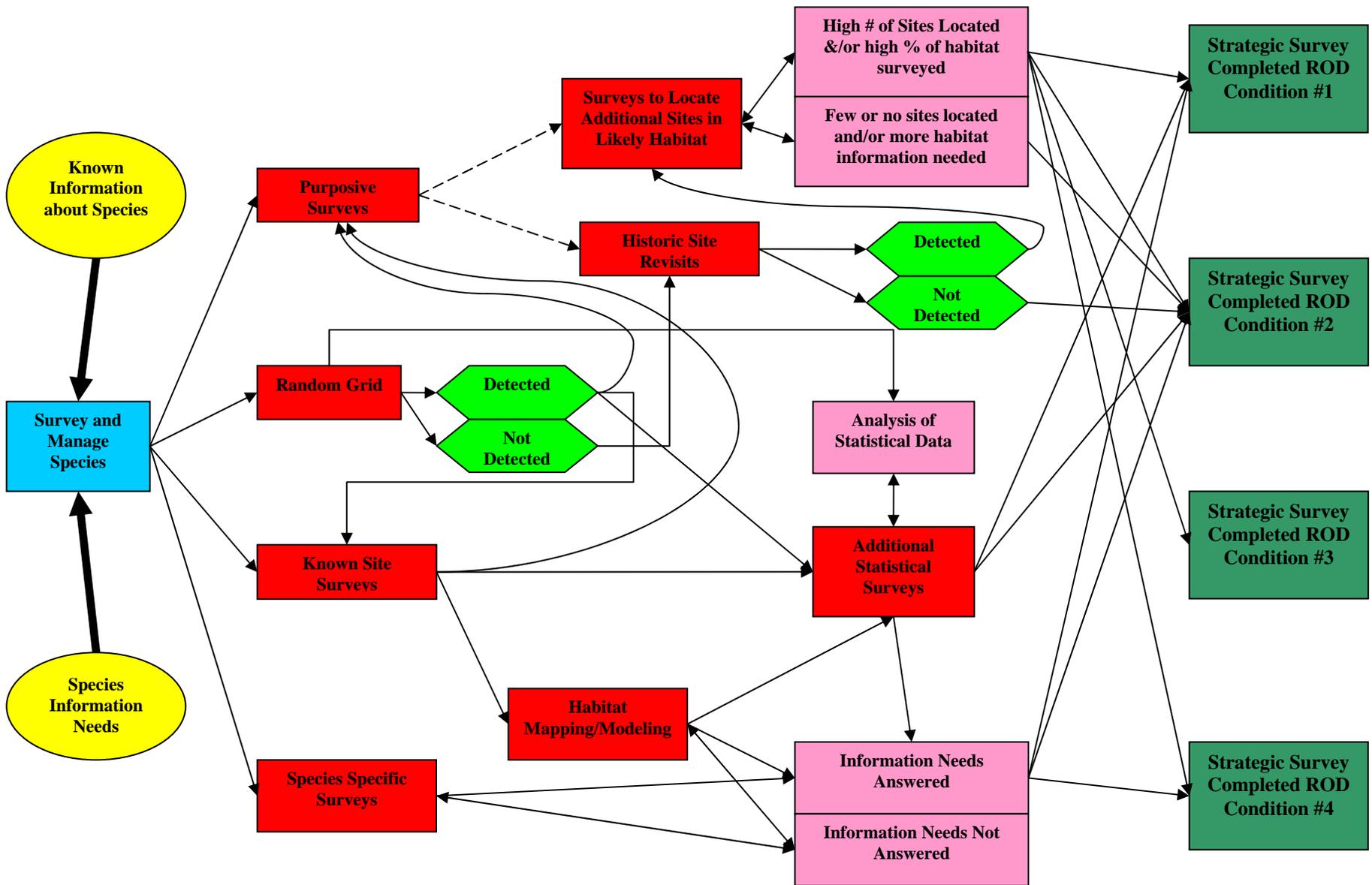
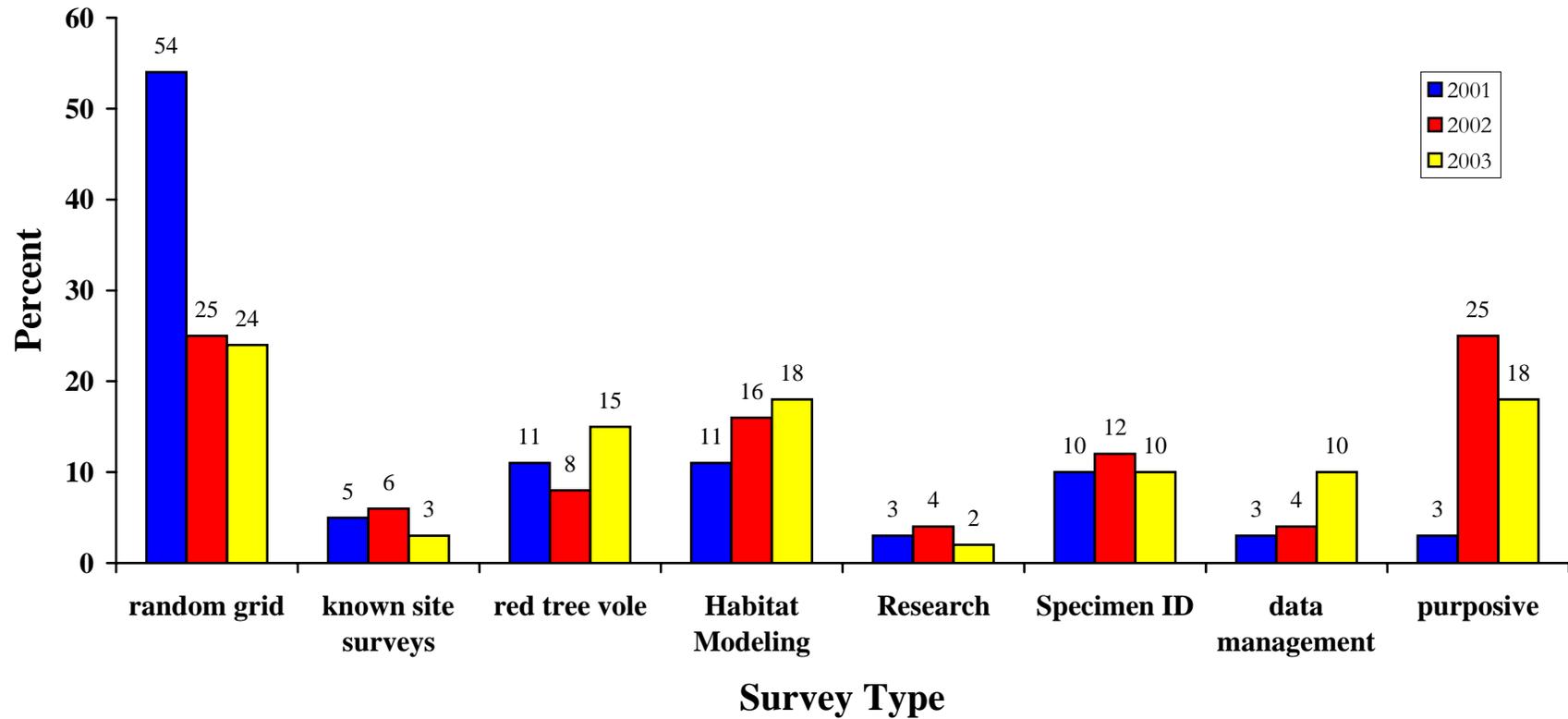


Figure 1. Conceptual model showing how to determine when strategic surveys would be considered complete according to the four conditions listed in the ROD page 30.

Figure 2. Strategic Survey Costs, Percent by Survey Type (FY 2001-2003)



Appendix 1. Completing Strategic Surveys

Strategic surveys are focused surveys answering specific information needs for Survey and Manage species. When information needs are answered, one of the four conditions are met, or the species is removed from Survey and Manage then strategic surveys are complete. This appendix describes different scenarios for when to consider if strategic surveys are considered complete.

Figure 1 shows a conceptual model of different strategic survey strategies. Current information (number of known sites, distribution, habitat, etc) about a species and the species information needs are the first things to consider when determining what survey strategies to implement. For some species one or a combination of survey strategies were used. These surveys include the random grid survey on CVS/FIA plots, purposive surveys in likely habitat (if known), known site surveys to collect habitat information, and for some species specific surveys were designed to answer specific information needs.

In some cases pre-disturbance survey data (known sites found while conducting these surveys) was used to target strategic surveys. Pre-disturbance surveys had been conducted before strategic surveys and numerous locations were found from these surveys. Strategic surveys used this data to conduct known site surveys and purposive surveys in likely habitat.

For species where there was little information (only known from historic collections) and general information needs (i.e. is the species LSOG associated) the random grid survey was used to collect information. If these species were detected on the random grid these new locations could be used to collect habitat data (Known Site Surveys) or survey in the vicinity of the new collections (purposive surveys). If potential habitat could be identified from these new locations then additional purposive surveys to locate additional sites would occur. For selected species, known site surveys could be used to develop potential habitat maps or habitat models. If likely habitat can be identified then additional purposive surveys could occur to attempt to locate additional sites. Additional statistically based surveys may also be initiated to make further inferences on species abundances and associations with late-successional/old-growth habitats.

Those species that are not detected on the random grid survey (and have not been observed since the inception of the Northwest Forest Plan) the next strategy would be to survey the historic location(s). This is the case for about 120 fungi species. Some of these locations have relatively general collection information (e.g. Iron Mountain) while others have more specific information (e.g. Longbow Campground). These areas would be surveyed in an attempt to relocate the site. In the case of fungi these surveys may take multiple visits over multiple years due to the species ephemeral fruiting. If these species are not located at these historic sites then a decision point is reached to consider if additional surveys will locate the species. In this case strategic surveys may be considered complete according to ROD condition #2.

Purposive surveys should only occur for those species where the potential habitat is known. It is not very strategic to conduct purposive surveys where little information is known about the species as with the case of most fungi. Surveys that have been conducted for fungi have yielded little results for most species. Species where the potential habitat is known purposive surveys have been successful for some species. Once enough sites have been located or a significant portion of the species habitat has been surveyed then strategic surveys could be considered complete (if the species still remains a Survey and Manage species).

With the random grid survey nearing completion there is the possibility of doing additional statistically based surveys. These may include surveying additional CVS/FIA plots to increase the sample size and confidence of this survey, conducting cluster sampling at CVS/FIA plots with positive detections (the hypothesis being that there are additional locations of the species in the vicinity), or random or stratified random samples.

Some species or species groups have had specific surveys conducted to meet their information needs or where the other survey methods would not be successful in collecting information. These include surveys for coastal and aquatic lichens and vertebrates such as red tree vole and great gray owl. These surveys answer specific information needs and when completed (i.e. data analyzed and reported) decisions need to be made if additional surveys are necessary.

There are several strategies that could occur prior to completing strategic surveys. Much of this depends on what information is collected from previous surveys efforts. Decisions by managers will need to be made after surveys are completed to determine if additional surveys will meet the species information needs. Other factors to consider in determining if additional surveys are needed include the costs of surveys, what has been previously completed and the amount of information expected to be collected from subsequent surveys.

APPENDIX 2 - FUNGI

***Acanthophysium farlowii* (*Aleurodiscus farlowii*) (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from a single site on the Wenatchee National Forest at Lake Kachess picnic area. It is also known from Canada and northeastern United States. Species is saprophytic or possibly parasitic or endophytic, fruiting on recently dead twigs of live *Abies*, *Pseudotsuga*, *Tsuga* species. Fruiting bodies appear in May (Castellano and O'Dell 1997, Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. The random grid survey on CVS/FIA plots is not expected to detect this species since it occurs on recently dead twigs of live trees. The fungi surveys on the CVS/FIA plots are focused on ground dwelling fungi.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site. These surveys may need to occur over multiple years since this species may not fruit every year (Fine scale).
2. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Efforts to re-locate the known location should occur within the next couple of years. If more locations are found then additional surveys in the southern Washington Cascades and Olympic Peninsula should be conducted. If more sites are located then the surveys should attempt to answer the questions: Is the species associated with late-successional habitat and; Does the reserve network provide for the species?

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

Appendix 2 – Fungi

needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. Collecting habitat data from known site surveys will provide habitat information that can be used to target where future surveys may occur.

2003 STRATEGIC SURVEY PRIORITY

1. Conducting surveys in the vicinity of the historic location at Lake Kachess picnic area is a high priority. This survey should occur in May when the species is fruiting (Castellano et al. 1999).
2. Conducting known sites surveys is a high priority if historic or new locations are found.

***Albatrellus avellaneus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is historically known from three sites within Northwest Forest Plan area: Olympic National Forest (Quinault Research Natural Area), Friday Harbor Biological Station (San Juan County, Washington), and Shore Acres State Park (Coos County, Oregon). PNW mycology lab personnel made one new collection at Cascade Head (Tillamook County, Oregon) in 2001. Other sites with vague location data range to Humboldt County, CA. Primarily, but not entirely, occurs coastal in this region. This species is a terrestrial polypore presumed to be mycorrhizal with Pinaceae spp. Fruiting bodies have been collected from September through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites on public lands are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years since this species may not fruit every year. (Fine scale).
2. Complete random grid survey on FIA/CVS plots (Broad scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this will provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site will provide habitat information that can be used to target where future surveys may occur.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority. This survey will be completed in the spring of 2003 with data analysis expect to be completed by fall 2003.
2. Revisit of historic sites to determine if the species is still extant is a high priority.
3. Conducting known sites surveys is a high priority if historic or new locations are found.
4. Conducting purposive surveys is a low priority until the status of known sites is determined.

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from nine sites within Northwest Forest Plan area, ranging from Humboldt County, CA (Prairie Creek Redwoods State Park, Rhododendron Trail), Oregon (Clackamas County, Wemme; Lane County, near Woahink Lake in Honeyman State Park; Willamette National Forest, near Odell Lake) to Washington (Olympic National Park, Lake Mills Trail; on private lands near Langley, Whidbey Island; Mount Baker-Snoqualmie National Forest; Barlow Pass; and on private lands near Lake Hannan). The most recent collections were made in 1997 at the two sites in California and at Odell Lake. The other collections were made from 1966 to 1992. This species is also known from the northeastern U.S. Terrestrial polypore presumed mycorrhizal with *Tsuga* spp. (Castellano et al. 1999). Species fruits from September through November.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid surveys on CVS/FIA plots (Broad scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

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efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this will provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site will provide habitat information that can be used to target where future surveys may occur.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit of historic sites on Forest Service administered lands to determine if these species are still extant at these sites is a high priority.
 3. Conducting known sites surveys is a high priority if historic or new locations are found.
 4. Conducting purposive surveys is a lower priority until the status of known sites is determined.
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***Albatrellus ellisii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 43 records (ISMS November 2002) in Northwest Forest Plan area. Many of these locations have been found incidentally while conducting pre-disturbance surveys for other Survey and Manage species. Several of these sites are clustered within a small area. These sites are found on Lakeview BLM (10 locations), Rogue River (3 locations), Willamette (2 locations), Klamath (3 locations) and Winema (16 locations) National Forests. Species experts have not verified several of these locations. Three new locations have been verified from the Winema National Forest and Medford BLM. Approximately 23 of these sites are located in matrix lands (USDA, USDI Species Review Panel 2001) and are relatively close together.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots (Broad scale).
2. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitat and if reserve network provides for species.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority. This survey will be completed in the spring of 2003 with data analysis expect to be completed by fall 2003.
 2. Purposive surveys in reserve land use allocations in the vicinity of recently discovered locations are a high priority.
 3. Conducting known sites surveys is a high priority at recently discovered locations.
-

***Albatrellus flettii* (B in California and Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was recently removed from the Survey and Manage list in Oregon (2001 Annual Species Review), but remains on in California and Washington. Species is known from 34 locations in Washington with 12 locations found in the Hidden Lakes area of the Pasayten Wilderness (Okanogan National Forest). These were located during a regional level survey by the fungi taxa expert and crew in 1999. An additional 14 locations have been reported from the Gifford Pinchot National Forest from 2000 and 2001. Taxa experts may not have verified many of these specimens. There are also 7 locations in Washington (Mt Baker-Snoqualmie, and Wenatchee National Forests) found prior to 1993 with vague location information. In California this species is known from historic locations at Jedediah Smith State Park, Lassen National Forest, Mendocino Woodlands State Recreation Area, and Klamath National Forest. As with other *Albatrellus* species this is a terrestrial polypore presumed to be mycorrhizal with Pinaceae.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the sites found on the Gifford Pinchot in 2001 are actually this species. Revisit these sites to make collections to be verified by taxa experts.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Revisit sites on Gifford Pinchot National Forest to verify if these are *Albatrellus flettii*.
3. Conduct known site surveys at locations on the Gifford Pinchot (after verification of species presence) and Okanogan National Forests.
4. Revisit historic locations of the species in California.
5. Conduct purposive surveys in late-successional reserves. Multi-year survey efforts may be required to locate more sites. Surveys should be focused in the Washington Cascades in the Okanogan and Wenatchee National Forests. (mid- to fine-scale)

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years, along with conducting additional surveys in the vicinity of known locations and nearby suitable habitats. The locations on the Gifford Pinchot National Forest should be verified in the next few years. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
2. Revisiting sites recently found on the Gifford Pinchot National Forest will determine if these are valid locations.
3. Revisiting the historic locations in California will determine if the species is still extant at these sites.
4. Conducting known site surveys will provide habitat information that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority. This survey will be completed in the spring of 2003 with data analysis expect to be completed by fall 2003.
2. Revisiting the sites on the Gifford Pinchot to determine the status of these locations is a high priority.
3. Revisiting the historic sites in California and northern Washington is a high priority.
4. Conducting known site surveys to collect habitat information is a high priority.

***Alpova alexsmithii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, known from nine sites along the western slope of the Cascades in WA and OR. Five of these locations were found prior to 1980. It is also known from British Columbia. Locations in Oregon are from Mt Hood National Forest at Still Creek forest camp (near Government Camp); Mt Jefferson Wilderness Area, below Carl and Shirley Lakes; Willamette National

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Forest; near Breitenbush Hot Springs, in the Three Sisters Wilderness, and near Waldo Lake. In Washington one known location was observed in 1974 at Mt Rainier National Park, Meadow Creek. This species forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Tsuga heterophylla* and *T. mertensiana* above 1100 meters elevation. Fruiting bodies have been collected from August through December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. An incidental find by non-forest service personnel occurred in 2002 near the historic site at Still Creek forest camp (Survey and Manage Fungi Lab database, 2003).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid surveys on CVS/FIA plots (Broad scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site will provide habitat information that can be used to target where future surveys may occur.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority. This survey will be completed in the spring of 2003 with data analysis expect to be completed by fall 2003.
 2. Revisit of historic sites to determine if the species is still extant is a high priority.
 3. Conducting known sites surveys is a high priority if historic or new locations are found.
 4. Conducting purposive surveys is a low priority due to the detectability of the species and until the status of the historic sites is determined.
-

***Alpova olivaceotinctus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Oregon. It is known from two sites within the Northwest Forest Plan area: Siskiyou Co., CA (on Fruit Grower's Supply Co. land west of Hilt, CA) and Jackson Co., OR (Medford District BLM, Howard Prairie). Two additional locations are known to occur in unspecified locations in coastal northern CA. Forms sporocarps beneath the soil surface associated with various *Abies spp.*, *Arbutus menziesii*, *Pinus ponderosa*, *Pseudotsuga menziesii* and *Quercus kelloggii*. The last collection for this species was in 1983. Fruiting bodies have been collected in June, October, November and February.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known site on federal administered land is still extant (Fine-scale).
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known site on Medford BLM land to determine if species is still present. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid surveys on CVS/FIA plots. (Broad scale).
3. Conduct known site surveys at new locations to collect habitat information if species is located.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site on Medford BLM will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect habitat information that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit of known site on Medford BLM administered-land is a high priority.
 3. Conducting known sites surveys is a high priority if historic or new locations are found.
 4. Conducting purposive surveys is a low priority due to the detectability of the species and until the status of the historic sites is determined.
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***Arcangeliella camphorata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area this species is known from nine sites. Recent collections of this species have occurred on Coos Bay BLM (Camas Creek) in 2001 and two on the Siskiyou National Forest in 2000. Remaining collections have occurred prior to 1993 (2 locations near Valsetz Lake one at Neptune State Park near Cape Perpetua) and one on Salem BLM near Green Peak (Mary's Peak Resource Area) in 1985. One location has also been found on the CVS/FIA random grid survey on the Siskiyou National Forest. This species forms sporocarps beneath the soil surface associated with various *Pinaceae* spp., particularly *Pseudotsuga menziesii* and *Tsuga heterophylla* from 200 to 950 m elevation. This species fruits from March through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on one CVS plot from this survey effort.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Collect habitat information for the species from the new locations recently found on Coos Bay BLM and Siskiyou National Forest.
4. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at new locations to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate historic locations should also occur within the next couple of years. Conducting known site surveys at recent locations should also occur.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site survey data will collect detailed habitat information that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known sites surveys is a high priority at recently discovered locations on Coos Bay BLM and Siskiyou National Forest.
3. Conducting purposive surveys is a low priority due to the detectability of the species and until the status of the historic sites is determined.

***Arcangeliella crassa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Endemic to California; known from 3 sites in the Northwest Forest Plan (Klamath National Forest, junction of Cecilville Road and The Pacific Crest Trail; Shasta-Trinity National Forest, flats just below Sand Flats and head of the south fork of the Salmon River) with three additional sites outside the planning area; forms sporocarps beneath the soil surface associated with various Pinaceae including *Abies*, *Pinus* from 2000 to 2200 meter elevation. This species has not been collected since 1983. It fruits from June through October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Conducting known site surveys will provide more information about this species habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the known sites on the Klamath and Shasta-Trinity National Forests is a high priority.
 3. Conducting known sites surveys is a high priority if historic or new locations are found.
 4. Conducting purposive surveys is a low priority due to the detectability of the species and until the status of the historic sites is determined.
-

***Arcangeliella lactarioides* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is currently known from five sites. Historical locations include one in California on the Shasta-Trinity National Forest (McBride Springs Campground) and one site at Bear Springs on private land. One new location has been recently located in 1999 on the Deschutes National Forest at the head of Jack Creek, and in the Modoc National Forest. It is also known from the Lassen National Forest outside the Northwest Forest Plan area. This species forms sporocarps beneath the soil surface associated with various Pinaceae above 1650 meters elevation; fruiting bodies have been observed from July to November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species. If the recent location on the Deschutes can be relocated a known site survey should be conducted.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data from known site surveys will provide information about the species habitat that may be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit of historic site on the Shasta-Trinity National Forest to determine if species is still extant is a high priority.
 3. Conducting known sites surveys is a high priority at the recent collection on the Deschutes National Forest or if historic or new locations are found.
 4. Conducting purposive surveys is a lower priority due to the low detectability of this species.
-

***Asterophora lycoperdoides* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This parasitic fungus is known from four sites within the Northwest Forest. The most recent collection was in 1996 on the Salem BLM District. This species has also been collected in 1967 and 1968 at Jedediah Smith State Park in California, and two in Washington (Puget Sound area and on the Olympic National Forest). This species occurs on the remains of fungi fruiting bodies. Most are infrequent or rare, but may be locally common where host fungi are present.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant (Fine-scale).
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are the species fungal hosts specific to a few fungi or include a broad range of fungi species? Are the host fungal species associated with late-successional/old-growth forest habitats? The key habitat feature for this species may not be whether the forest is late-successional/old-growth but the presence of host fungi (and if these species are late-successional/old-growth associated).

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale). Due to this species habit of parasitizing other fungal species re-locating historic sites may be extremely difficult due to the fact that it is unknown what species act as hosts.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Collections of this species should make an attempt to record the host fungi species to determine host specificity.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Recording the fungal hosts for this species when it is collected will determine the host specificity of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic site locations is a high priority to determine if species is still extant at these sites, make collections to determine species fungal host and record habitat information.

***Asterophora parasitica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from five locations with the most recent collection occurring in 1989. Collections have been made in Coos County (Coos County Forest); Cape Lookout, Oregon; 2 sites near Orick, California; and Prairie Creek Redwood State Park. This species is known to be parasitic on the remains of fungi fruiting bodies (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are the species fungal hosts specific to a few fungi or include a broad range of fungi species? Are the host fungal species associated with late-successional/old-growth forest habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid surveys on CVS/FIA plots (Broad Scale).
3. Collections of this species should make an attempt to record the host fungi species to determine host specificity.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Recording the fungal hosts for this species when it is collected will determine the host specificity of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic site locations is a high priority to determine if species is still extant at these sites, make collections to determine species fungal host and record habitat information.
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***Baeospora myriadophylla* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from 17 sites, with all of them occurring in Washington. Collections of this species have occurred on the Olympic and Mount Baker-Snoqualmie National Forests, North Cascades and Mt Rainier National Parks, and on private or state lands. The last collection of this species was made in 1994 on the Mount Baker-Snoqualmie National Forest near Baring Mountain. This species is a saprobe and either occurs on litter/humus and/or coarse woody debris.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid surveys on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if locations of the species are found to collect habitat information for this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Conducting known site surveys will provide more information about this species habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisit of historic sites to determine if species is still extant is a high priority.
3. Conducting known sites surveys is a high priority if historic or new locations are found.
4. Conducting purposive surveys is a lower priority until the status of known sites is determined.

***Balsamia nigrens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four locations in Oregon (Benton County, Woods Creek Road; BLM Medford District, Applegate; Missouri Flats near Grants Pass; Flying M Ranch near Yamhill) and one location in northern California with vague collection information. Only two of these sites occur on federal ownership. This species has not been collected since 1986. This species forms sporocarps beneath the soil surface associated with various Pinaceae at low to mid-elevation. Fruiting bodies have been collected in March, May, June, and October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant (Fine-scale)?
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if new locations are found to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site survey data will provide habitat information that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting of historic sites is a high priority.
 3. Conducting known sites surveys is a high priority if historic or new locations are found.
 4. Conducting purposive surveys is a lower priority until the status of known sites is determined.
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***Boletus haematinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, known only from one site on the Wenatchee National Forest at Smith's Brook, 0.5 miles east of Steven's Pass; twelve sites are known from California but are outside the Northwest Forest Plan area; not known from Oregon; sporocarps are scattered to gregarious in association with *Abies* spp.; appears to be limited in distribution to subalpine forests, typically cool and wet; is thought to fruit from August through October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known site near Steven's Pass is still extant.
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic site on the Wenatchee National Forest will be an attempt to collect a specimen and relocate this site. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if the species is relocated to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. Known site surveys will provide additional habitat information that can be used to target future survey efforts.
3. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known site near Stevens Pass on the Wenatchee National Forest is a high priority.
3. Conducting known sites surveys is a high priority if historic or new locations are found.
4. Conducting purposive surveys is lower priority until the status of the site near Steven's Pass is determined.

***Boletus pulcherrimus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. Within the Northwest Forest Plan area, known from a total of 13 sites with two occurring in Washington (Mount Baker-Snoqualmie National Forest – Monte Cristo and near Puyallup), seven sites in Oregon (four sites on Medford BLM, two sites on Rogue River National Forest, and near Eugene at Spencer Butte), and four from California (three locations near Mendocino Woodlands State Recreation Area and one near

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Eureka). Recent collections were made on Medford BLM and the Winema National Forest. Sporocarps are usually solitary, never in groups, in humus in association with mixed conifers (*Abies grandis*, *Pseudotsuga menziesii*) and hardwoods (*Lithocarpus densiflorus*) in coastal forests. This species fruits from July through December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale).
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at known locations to record habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Conducting known site surveys will provide additional habitat information than can be used to target future survey efforts.
3. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic sites is a high priority.
3. Conducting known sites surveys is a high priority if historic or new locations are found.
4. Conducting purposive surveys is a lower priority until the status of the known sites is determined.

***Bondarzewia mesenterica* (*Bondarzewia montana*) (B in California and Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Across the Northwest Forest Plan this species is known from well over 100 sites. The 2001 Annual Species Review removed this species from the Survey and Manage list in Oregon but retained it in California and Washington. In Washington there are 19 records of this species occurring on the Gifford Pinchot, Mount Baker-Snoqualmie, Olympic and Wenatchee National Forests. There are seven records for this species in California on the Klamath, Shasta-Trinity, Six Rivers National Forests and one in Redwood National Park. This species produces sporocarps associated with stumps, snags or coarse woody debris in coniferous forests. Fruiting bodies are present from August to December (Castellano et al. 1999) but may occasionally occur throughout the year.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include random grid surveys on CVS/FIA plots and purposive surveys. There have been no detections of this species on these plots. Two incidental locations have been made while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species meet the criteria for inclusion in Survey and Manage?
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence in Washington and California?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots.
2. Complete known site surveys at locations in Washington and California.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Continue to conduct known site surveys at verified locations to collect habitat data and develop to develop a potential habitat maps for Washington and California. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats in Washington and California. It can also provide new locations where habitat data can be collected.
2. Known site surveys will collect habitat data that can be used to develop potential habitat maps and target where future surveys may occur.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Continue to conduct known site surveys for this species in Washington and California.
 3. Conducting purposive surveys in reserves in Washington and California is a lower priority.
-

***Bridgeoporus nobilissimus* (*Oxyporus nobilissimus*) (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon and Washington. Within the Northwest Forest Plan, this species is known from 59 records in the ISMS database. Found in the Cascades of northern Oregon and Washington with one site at Mary's Peak on the Oregon Coast Range. It is also known from the Olympic Peninsula and one unverified/undocumented location in California (ISMS data base). This species is exclusively associated with true fir (*Abies*) hosts, especially *Abies procera* (noble fir) but has also been observed on *A. amabilis* (silver fir). It is found on old, large stumps, snags, and >400 year old live trees. The current Potential Natural Vegetation (PNV) model predicts potential habitat for this species from the Olympic National Forest south to the Willamette National Forest, in plan communities that have a component of large *Abies* (usually higher elevation). This species is a large conspicuous conk that produces fertile tissues from August through November, but is observable year round (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

A habitat-modeling project has been ongoing for three years to develop potential habitat maps for this species. It is at the validation stage at this time. This species has not been detected on the Random Grid survey on CVS/FIA plots. No locations have been found while conducting purposive surveys on 383 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Field validation of predicted occurrences, in order to test both the landscape-scale PNV model and the microsite-scale Bayesian Belief model.
2. Detection methods that would determine the presence of the species without observing the fruiting body. This species may infect a host for several years, perhaps decades or centuries, before the fruiting body appears.
3. Monitoring of current known sites, as it appears that some of these sites are declining in recent years.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of habitat modeling, including validation surveys.
2. Working with researchers in developing methods to detect this species without observing the fruiting bodies. Assisting with researchers to test these survey methods in the field.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Field validation of sites throughout the species habitat will provide further information about the potential habitat of this species.
2. Developing detection methods could be used to determine how long it takes for fruiting bodies to appear. It can also be used to determine if a stand has this species mycelium that would lead to better management of the species.

2003 STRATEGIC SURVEY PRIORITY

1. Completing validation models for this species is a high priority.
2. Assisting field researchers to field test alternative detection methods is a high priority.

***Cantharellus subalbidus* (D in California and Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from numerous locations throughout the Northwest Forest Plan. Approximately 50 locations have been entered in the ISMS database, 18 from Washington. This species occurs across a wide range of habitats and is found in numerous administrative units. This species has been documented to occur on 35 CVS/FIA plots, with three detections in California and six detections in Washington. Habitat for this species is coniferous forests, presumed to be mycorrhizal with various Pinaceae.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. So far this species has been identified on 35 CVS/FIA plots, with 3 occurring in California and 6 in Washington.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species meet the criteria for inclusion in Survey and Manage?
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.
3. Are known sites re-locatable and enough information available so that high-priority sites can be determined in California and Washington.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid survey on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats in Washington and California. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Catathelasma ventricosa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 15 locations in the Northwest Forest Plan. All but two of the locations were collected prior to 1993, with many of these before 1975. Location information for these historic locations is vague, but has been collected in Washington (Lake Angeles and Mt Rainier National Park), Oregon (Coos County Forest and Charleston), and Coastal California (8 locations). Two specimens were collected from the Willamette National Forest in 1998 and 1999. Very little is known about the habitat of this species and when the sporocarps are present.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if the species is relocated to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

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needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Known site surveys will provide additional habitat information that can be used to target future strategic survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Collecting habitat information from known sites is a high priority if the species is located.
3. Conducting purposive surveys is a lower priority until the status of known sites is determined and the detectability of the species.

Chalciporus piperatus (Boletus piperatus) (D)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is historically known from over 100 sites on numerous administrative units ranging from the Okanogan to the Six Rivers National Forest. Several locations have been located within the Northwest Forest Plan area since 1994.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species meet the criteria for inclusion in Survey and Manage?
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.
3. Are known sites re-locatable and enough information available so that high-priority sites can be determined.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
2. Purposive surveys should identify additional sites in the reserves that may help determine high priority sites for management.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Chamonixia caespitosa* (*Chamonixia pacifica*) (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from five historic sites in Northwest Forest Plan area; found in northern Washington Cascades Wenatchee National Forest, Rainy Pass; Olympic Peninsula (Olympic National Forest, Lost Creek), Oregon (Siuslaw National Forest, Cape Perpetua, Nature Conservancy Land - Cascade Head Experimental Forest) and California Coast (Redwoods State Park, Prairie Creek). This species forms sporocarps beneath the soil surface associated with *Abies amabilis* and *Tsuga* sp in higher elevation forests and *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* in coastal forests. Fruiting bodies have been collected from June through November. Two new locations of these species have been collected through strategic surveys on the Olympic National Forest.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been two detections of this species on these plots on the Olympic National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at new locations on the Olympic National Forest and if historic or new locations are found.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Conducting known site surveys to collect habitat information could be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys at recently found locations in the CVS grid is a high priority.
 3. Conducting purposive surveys for this species is a lower priority until the status of the historic sites are determined and also due to the detectability of the species.
-

***Choiromyces alveolatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from eight locations within the Northwest Forest Plan. Seven of these locations were collected prior to 1994. This species has apparently been collected from one location on the Mt Hood, Siuslaw, Willamette, Rogue River National Forests, and two locations on the Klamath National Forest. One site was recently collected from the Deschutes National Forest in 1998, but it is unclear if the specimen was verified. This species forms sporocarps beneath the soil surface associated with various Pinaceae. Fruiting bodies have been collected from May through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Determine if recent locations are valid known sites (i.e. sites able to be relocated and verified by species expert).

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys if new or historic locations are found.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.
3. Conducting known site surveys that collect additional habitat data can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at recently found locations in the CVS grid is a high priority.
3. Conducting purposive surveys for this species is a lower priority until the status of the historic sites are determined and also due to the detectability of the species.

***Choiromyces venosus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from two locations within the Northwest Forest Plan area, one collected on Eugene BLM in Mohawk Research Natural Area in 1982 and another unverified location from King Mountain National Conservation Area in Humboldt County, California in 1999. This species forms sporocarps beneath the soil surface associated with *Pseudotsuga menziesii* and *Tsuga heterophylla* at low elevation. Fruiting bodies have been collected in October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If historic location or new sites discovered conduct known site surveys to collect additional habitat requirements.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site at Mohawk RNA will be an attempt to collect a specimen and relocate this site.
2. Conducting known site surveys at locations (if found) will provide additional habitat information that can be used to target future strategic survey efforts.
3. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys at recently found locations in the CVS grid is a high priority.
 3. Conducting purposive surveys for this species is a lower priority until the status of the historic sites are determined and also due to the detectability of the species.
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***Chroogomphus loculatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four locations on the Willamette National Forest (Waldo Lake trail, McClellan Mtn, Lamb Butte Scenic Area, and Hand Lake trail). It forms sporocarps beneath the surface in association with *Tsuga mertensiana* at 1400 meters elevation. Fruiting bodies have been collected in October (Castellano et al. 1999). One recent collection has been made (but not verified) on the Umpqua National Forest while conducting purposive surveys in fall 2001.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known site at Lamb Butte Scenic Area is still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys to collect habitat information at known sites.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances,

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association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.
3. Conducting known site surveys that collect additional habitat data can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys to collect habitat data is a high priority.
3. Conducting purposive surveys for this species is a lower priority until the status of the historic sites are determined and also due to the detectability of the species.

***Chrysomphalina grossula* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 14 locations throughout the Northwest Forest Plan. Survey and Manage mycology lab personnel collected one site in 1999 at Mary's Peak. The remaining locations are all historic with vague location and habitat data. These historic sites range from Olympic Peninsula and Mount Baker-Snoqualmie National Forest to central Oregon Coast Range (Van Duzer Corridor).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting purposive surveys and known site surveys for this species is a lower priority until the status of the historic sites are determined and also due to the detectability of the species.
-

***Clavaridelphus ligula* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from a total of approximately 50 total sites within the Northwest Forest Plan area with several apparent collections in recent years. Several new locations have been collected on the Umpqua, Mount Hood, Shasta-Trinity, Wenatchee, Okanogan, and Gifford Pinchot National Forests, and Medford, Lakeview, and Roseburg BLM from 1997 to 2001. *Clavaridelphus* species require cool, moist forests and increase in frequency with increasing elevation and latitude (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has been detected on 4 CVS/FIA plots on the random grid survey. In addition two collections were made, and verified, while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys to collect additional habitat information.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.
2. Known site surveys will collect additional habitat data that can be used to develop habitat maps and target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys is a lower priority for this species.

Clavaridelphus occidentalis (Clavariadelphus pistillaris) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 72 records (ISMS) with 21 of these records collected prior to 1993. Approximately 51 locations have been collected since 1994 from the following administrative units; Mt Hood (2 locations), Coos Bay (1 location), Roseburg (8 locations), Wenatchee (1 location), Willamette (12 locations), Salem (7 locations), Klamath (2 locations), Medford (2 locations), Umpqua (7 locations), Rogue River (1 location), and Arcata (8 locations). This species has been detected on five random grid surveys on CVS/FIA plots. Species experts may not have verified some of these locations. This species has a broad habitat association (USDA, USDI Species Review Panel 2001). *Clavaridelphus* species require cool, moist forests and increase in frequency with increasing elevation and latitude (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on five CVS/FIA plots on the Umpqua, Willamette, Six Rivers National Forests and Salem and Coos Bay BLM Districts.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Clavaridelphus sachalinensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

There are 35 records for this species in the ISMS database. Many of these locations (23) have been found on Medford BLM District. Taxa experts have not verified several (21) of these collections. Other collections of this species have occurred on the Okanogan National Forest in 1999 (Davis), Rogue River National Forest (Fond Rick/Odell), and one on Lakeview BLM verified by the Survey and Manage mycology lab. In addition there are four historic sites with vague location data. *Clavaridelphus* species require cool, moist forests and increase in frequency with increasing elevation and latitude (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.

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3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at recently discovered sites to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Conducting known site surveys at recently discovered locations will provide additional habitat information that can be used to target future survey efforts.
3. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at recently discovered locations is a high priority.

***Clavariadelphus subfastigiatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from five locations (one location on Medford BLM un-verified) from the Umpqua National Forest, Salem and Roseburg BLM. *Clavariadelphus* species require cool, moist forests and increase in frequency with increasing elevation and latitude (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no detections of this species on CVS/FIA plots. One location was found while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Conduct purposive surveys in vicinity of known location and similar habitats. Multi-year survey efforts may be required to locate more sites. (Mid- to fine-scale)
3. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Conducting known site surveys at recently discovered locations will provide additional habitat information that can be used to target future survey efforts.
3. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys to collect habitat information is a high priority.
 3. Revisiting historic locations to determine if the species is still extant is a high priority.
-

Clavaridelphus truncatus (Clavariadelphus borealis) (D)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 sites throughout the Northwest Forest Plan area. Locations range from the Okanogan National Forest to the Mendocino. It is unknown how many of these past records have been verified by taxa experts. Recent collections have occurred on the Winema and Umpqua National Forests. This species has also had detections on the CVS/FIA random grid survey. *Clavaridelphus* species require cool, moist forests and increase in frequency with increasing elevation and latitude (Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species have been the random grid survey on CVS/FIA plots and purposive surveys. There have been two detections on the Umpqua National Forest of this species on CVS plots. In addition five new locations were found while conducting purposive surveys for other fungal species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species meet the criteria for inclusion in Survey and Manage?
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Does this species meet the criteria for inclusion in Survey and Manage?

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2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.
3. Are the known sites re-locatable so that high-priority sites can be selected.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

Clavulina castanopes v. lignicola (Clavulina ornatipes) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 10 historic sites within the Northwest Forest Plan. Since strategic surveys have begun, this species has been detected on eight CVS/FIA plots. Very little is known about habitat with the exception that is a saprophytic species requiring dead wood.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been eight detections of this species on CVS plots on the Siuslaw and Gifford Pinchot National Forests. Specimens have been collected in the fall and spring.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at recent locations on CVS/FIA plots to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Conducting known site surveys will collect habitat data that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at locations found at CVS plots is a high priority.

***Clitocybe senilis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately ten sites within the Northwest Forest Plan area, one historic location at Barlow Pass on the Mount Baker-Snoqualmie National Forest and on Salem BLM. Three unverified collections have been made of this species on FIA plots in California. This species is restricted to

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conifer forests. Fruiting bodies have been observed from July through October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been three unverified detections of this species on CVS plots on the Shasta-Trinity, Klamath, and Six Rivers National Forests. Specimens have been collected in the fall and spring. One collection of this species was made while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots, including specimen identification (Broad Scale).
3. If collections on FIA plots are determined to be this species conduct known site surveys at these and locations on Salem BLM. If historic locations are found conduct known sites at these also.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Conducting known site surveys will collect habitat data that can be used to target future survey efforts.
3. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys to collect habitat at the FIA locations (when verified) and on Salem BLM is a high priority.
-

***Clitocybe subditopoda* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from less than 5 sites within the Northwest Forest Plan area. In Oregon, it is found on the Mount Hood National Forest (above Welches and near Mile Bridge) (Castellano et al. 1999), on the Olympic Peninsula (Olympic National Park, near Hoh River; and Olympic National Forest (Quinault Lake, Quinault Research Natural Area). Two locations, verified by David Largent, have been collected on the Headwaters Forest Reserve on Arcata BLM. This species forms sporocarps on needle beds of *Picea* and *Pinus* to mid-elevation conifer forests. Fruiting bodies have been collected from October through early December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are recent locations found on Headwaters Forest Reserve in northern California actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct surveys in Headwaters Forest Reserve to collect additional specimens for verification.
4. Conduct known site surveys to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant. Additional surveys should occur in the Headwaters Forest Reserve to make additional collections or acquire the previous collections to have them identified by another mycologist.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Conducting known site surveys will collect habitat data that can be used to target future survey efforts.
4. Conducting additional surveys in Headwaters Forest Reserve or acquiring the specimens for additional verification will determine the species actually occurs in this area.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting surveys in Headwaters Forest Reserve to collect additional specimens or acquiring the specimens from previous surveys is a high priority.
3. Conducting known site surveys at known locations is a high priority.

***Collybia bakerensis* (F)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 sites within the area of the Northwest Forest Plan with the majority from the Winema National Forest. Other locations occur from Washington to California. Fruits from May through October on conifer logs at higher elevations (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has been detected once on the random grid survey. Two locations were found while conducting purposive surveys on 734 acres on the Mt Hood National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Collybia racemosa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 30 sites with the majority of these historic, pre-1990, with vague location information. Thom O'Dell made one collection on the Rogue River National Forest in 1999. One unverified collection has been made of this species on the random grid survey. One unverified collection was made on Medford BLM in 2000. In addition two locations from Headwaters Forest Reserve on Arcata BLM were made in 1999. David Largent

from Humboldt State University has identified these specimens. Very little is known about the habitat of this species.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. One un-verified location of this species has been detected on a FIA plot on the Shasta-Trinity National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are the specimens collected in Headwaters Forest Reserve actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct additional surveys in Headwaters Forest Reserve and Medford BLM to make additional collections for verification.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant. Additional surveys should occur in the Headwaters Forest Reserve or acquire the previous collections to have them identified by another mycologist.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Conducting additional surveys in Headwaters Forest Reserve or acquiring the specimens for additional verification will determine the species actually occurs in this area.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting additional surveys in Headwaters Forest Reserve and Medford BLM or acquiring the previous collections is a high priority.
-

***Cordyceps ophioglossoides* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from less than 20 sites in the Northwest Forest Plan. All of these have vague location information. This species is parasitic on various *Elaphomyces* (false truffle) species.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species is associated with late-successional/old-growth stands.
2. What are insect hosts for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if

Appendix 2 – Fungi

they are still extant. Due to the parasitic habit of this species re-locating known sites may be very extremely difficult.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

Cortinarius barlowensis (Cortinarius azureus) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Prior to conducting strategic surveys, this species was known only from historical records including the following locations: Mt. Hood National Forest, Siuslaw National Forest, Mt. Hood National Forest, Mt. Baker-Snoqualmie National Forest (Darrington Ranger District), Olympic National Forest, and the Olympic National Park. This species has been detected on 17 CVS plots from the Olympic (5 plots), Mount Baker-Snoqualmie (7 plots), Gifford Pinchot (2 plots), Willamette (2 plots), and Siuslaw (1 plot) National Forests. Very little is known about this species habitat other than it is associated with various Pinaceae species.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species have included; the random grid survey on CVS/FIA plots and purposive surveys. This species has been found on 17 CVS plots in Washington (14 plots) and Oregon (3 plots). Purposive surveys on approximately 3,500 acres have produced one new location.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots (Broad Scale).
2. Revisit known locations from the CVS surveys to collect habitat data through known site surveys.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should be initiated to collect habitat data at these locations. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Conducting known site surveys at locations on CVS plots will collect habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at locations found on CVS plots is a high priority.

***Cortinarius boulderensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon and Washington. Known from 3 sites on the Mt. Hood National Forest (Twin Bridges Campground, Warm Springs River, Skyline Road, Zigzag), 3 sites in Olympic National Park (Olympic Hot Springs, Soleduc Campground B, Elwha River trail), and one site on Mt. Rainier National Park (Eagle Peak). Seven additional locations have been found while conducting strategic surveys. It produces sporocarps in association with various Pinaceae.

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Fruiting bodies have been observed in May and from September through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been six detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at locations found on random grid survey to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should be initiated to collect habitat data at these locations. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. Efforts to relocate historic sites may not be as necessary since new locations have been found on the random grid survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of known site will determine if still extant.
2. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Conducting known site surveys at locations on CVS plots will collect habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys at locations found on CVS plots is a high priority.
 3. Revisiting historic locations is a lower priority due to the recent locations.
-

***Cortinarius cyanites* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is widely distributed in the Northern Hemisphere. Within the NWFP area it has been documented historically from approximately 9 sites, including the Jackson State Forest in Mendocino County, California, Wenatchee National Forest, Olympic National Forest, Mt. Rainier National park and private lands (Castellano, et al. 2003). One new location has been collected on Salem BLM District in 2000. In addition this species has two detections from the random grid survey. Very little is known about this species habitat but in general most *Cortinarius* are associated with the roots of Pinaceae spp.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been two detections of this species on these plots from the Gifford Pinchot and Mount Baker-Snoqualmie National Forests. Purposive surveys on approximately 3,500 acres found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots (Broad Scale).
2. Revisit known locations from the CVS surveys and on Salem BLM to collect habitat data through known site surveys.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should be initiated to collect habitat data at locations found from this survey. Once these

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surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Conducting known site surveys at locations on CVS plots will collect habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys at locations found on CVS plots and one location on Salem BLM is a high priority.
-

Cortinarius depauperatus (Cortinarius spilomeus) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Approximately five historical sites from Washington (Olympic National Forest, Mount Rainier National Park), Oregon (Camp Meriweather, Fogerty Creek State Park) and California (Patrick's Point State Park). *Cortinarius depauperatus* requires moist to wet habitats with conifers, including *Picea sitchensis*, *Thuja plicata*, and *Tsuga heterophylla* (Castellano et al. 2003).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Cortinarius magnivelatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is reported from nine locations within the Northwest Forest Plan area. Six collections have been made on the Winema National Forest (four of these verified by taxa experts). Two unverified collections apparently have been made on the Shasta-Trinity National Forest, one in 1997 and the other a historic site in 1975. One additional site outside the plan area is known from Lassen National Park. This species forms sporocarps beneath the soil surface associated with the roots of *Abies concolor*, *Picea englemanii*, *Pinus lambertiana*, *Pinus ponderosa* above 1500 meter elevation; Fruiting bodies have been observed in May through August (Castellano et al. 1999). One new location was found during fall 2000 pre-disturbance surveys on the Winema National Forest.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant (Fine-scale)?
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys on recent known sites on the Winema National Forest to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should be conducted on the new sites found on the Winema National Forest. Efforts to relocate the historic locations should also occur within the next couple of years to determine if they are still extant. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.
3. Conducting known site surveys at locations will collect habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys at locations found recently on the Winema National Forest is a high priority.
-

***Cortinarius olympianus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 40 locations within the Northwest Forest Plan area, occurring primarily in the Cascades of Washington, Oregon, and California. About half of these sites were found prior to 1993 with vague location information. Several recent verified collections have been made on Salem (1 collection), Medford (5 collections), and Coos Bay (1 collection) BLM, Okanogan (5 collections), Rogue River (1 collection), Willamette (1 collection), Klamath (5 collections). It forms sporocarps in association with various Pinaceae. Fruiting bodies have been collected from September through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been four detections of this species on these plots. Purposive surveys on approximately 3,500 acres found three new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys at recently discovered sites to collect more detailed habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should be conducted on the new sites found in recent years. Efforts to re-locate the historic

locations may not be necessary since the discovery of new locations. Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.
2. Conducting known site surveys at locations will collect habitat that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys to collect habitat information is a high priority.
-

Cortinarius speciosissimus (Cortinarius rainierensis) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four historic sites within the Northwest Forest Plan area. One of these sites is one the Mount Baker-Snoqualmie National Forest with remaining three on Mount Rainier National Park. All of these sites were located prior to 1994.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat requirements within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Cortinarius tabularis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently not known to occur within the Northwest Forest Plan area.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species occurs within the Northwest Forest Plan area.
2. If sites are located, determine habitat, distribution, abundance, and LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

Cortinarius umidicola (Cortinarius canabarda) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from a single site in Washington (Okanogan National Forest, Easy Pass trailhead). Also occurs in New York and Europe. Fruits in September and is associated with the roots of various Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
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***Cortinarius valgus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the NWFP area, this species is known from one historic site from 1915 in Washington at Olympic National Forest (Lake Cushman). In 1999 this species was again found in Washington, on the Mount Baker-Snoqualmie National Forest (Barclay Creek). It is also known from the Rocky Mountains and Europe. Little is known about specific habitat, except that *Cortinarius valgus* is found in association with the Pinaceae. This species fruits in the fall (Castellano, et al., 2003).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine habitat, distribution, abundance, and LSOG association.
2. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Cortinarius variipes* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Washington and known from 5 sites (Olympic National Park, Olympic Springs; Wilderness State Park in Grays Harbor County; Mount Rainier National Park at Longmire; Mount Baker-Snoqualmie National Forest, North Fork Sauk River, 3.3 miles from trailhead; Barlow Pass) within the Northwest Forest Plan area. It is thought to occur in association with the roots of various Pinaceae spp between August and October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
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***Cortinarius verrucisporus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was thought to be endemic to California but recently a collection was made in Oregon. Within the Northwest Forest Plan area, it is known from one historic (1975) site in Siskiyou Co., CA (Horse Camp). One recent collection (2000) is from the Winema National Forest. Forms sporocarps beneath the soil surface and is associated with the roots of *Abies magnifica* and possibly other *Abies* spp. above 1,000 m elevation. Fruiting bodies have been collected from June through September (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Cortinarius wiebeae* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. Within the Northwest Forest Plan area, only known from one site on the Mount Hood National Forest (Camas Prairie) collected in 1958. Forms sporocarps beneath the soil surface and is associated with the roots of *Pseudotsuga menziesii* and *Pinus ponderosa* above 1200 m elevation. Fruiting season is limited to June (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots. Purposive surveys on approximately 3,500 acres have found no new locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information for this species within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic location should occur within the next couple of years to determine if it is still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Craterellus tubaeformis* (*Cantharellus tubaeformis*) (D in California and Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 400 sites within the NFP area with the majority of these occurring in Oregon. Most of these locations have been found in recent years and are likely to be extant. This species occurs in a wide range of plant communities across the Northwest Forest Plan area. It has been detected on 49

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CVS/FIA plots on the random grid survey with 16 in Washington and 6 in California.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include random grid survey on CVS/FIA plots and purposive surveys. This species has been detected on 49 CVS/FIA plots. In addition five new locations were found while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
2. Are known sites re-locatable and enough information available so that high-priority sites can be determined.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey (Broad Scale)

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Cudonia monticola* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 20 sites within the Northwest Forest Plan. Eleven locations have been found since 1998 on Coos Bay, Roseburg, and Salem BLM, Mt Hood, Umpqua, Okanogan and Willamette National Forests. Seven additional locations have been identified on the random grid survey, with six of these on the Willamette and one on the Siskiyou. Very little is known about this species habitat.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been seven detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic sites is a high priority.
-

***Cyphellostereum laeve* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 3 historic sites within the Northwest Forest Plan all on the Olympic Peninsula (Hoh River, Soleduck River and Lake Quinault). Very little is known about this species habitat.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic sites is a high priority.
-

***Dermocybe humboldtensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Oregon. Within the area of the Northwest Forest Plan, it is known from 2 sites in coastal California (Lanphere Dunes and Trinidad) and 2 sites in Douglas Co, Oregon (Roseburg BLM, North Myrtle Creek and Irwin Rocks Research Natural Area). Fruiting bodies have been collected in November and December in association with the roots of various Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic sites is a high priority.

***Destuntzia fusca* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Oregon. In the Northwest Forest Plan area, it is known from 2 coastal California sites (10 km west of Legett along Highway 1; Van Damme State Park) and one site on the Willamette National Forest (H.J. Andrews Experimental Forest, Stand #3). Fruits beneath the soil surface in October and December. It is associated with the roots of *Lithocarpus*

Appendix 2 – Fungi

densiflorus, *Pseudotsuga menziesii*, and *Tsuga heterophylla* below 1,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic sites is a high priority.
-

***Destuntzia rubra* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California. Within the Northwest Forest Plan area, it is known from 4 coastal sites (Del Norte County; 3.3 miles south of Smith River; Humboldt County; Jct of Maple Creek Road and Simpson Road 4800; Woodlands Camp on hill above mess tent; near Albion Bridge at jct of roads 490 and 480). Fruits beneath the soil surface in March, April, June, July, October and December. It is associated with the roots of *Abies grandis*, *Arbutus menziesii*, *Lithocarpus densiflorus*, *Pseudotsuga menziesii*, and *Sequoia sempervirens* below 650 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic sites is a high priority.

***Dichostereum boreale* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species occurs across the northern United States and Europe. Within the Northwest Forest Plan area, it is known from a single site in Pierce Co., Washington (Silver Springs Forest Camp). Other sites with vague locality data occur in Snohomish County Washington and Tillamook County Oregon. This species fruits on dead coniferous wood in May, July, and October (Castellano, et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and habitats within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year (Fine scale).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the historic locations should also occur within the next couple of years to determine if they are still extant.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitats. It can also provide new locations where known site surveys can be conducted.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic sites is a high priority.

***Elaphomyces anthracinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site on the Deschutes National Forest (Riverside Campground). It is also known from Idaho and Europe. Fruiting bodies occur beneath the soil surface and have been collected in May and August. Although very little is known about this species habitat it is thought to be associated with the roots of *Pinus ponderosa* in Oregon (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. At this time this species has not been detected on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the known site on Deschutes National Forest is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic site or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known location at Riverside Campground on the Deschutes National Forest should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

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needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic location on the Deschutes National Forest is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposeive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Elaphomyces subviscidus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site on the Deschutes National Forest (Three Creeks Lake) and one site with vague location information in Jackson, Co., Oregon (near Prospect). It is also known from Idaho. Fruiting bodies occur beneath the soil surface with collections being made in June and August. This species is thought to be associated with the roots of *Pinus contorta* and *Tsuga mertensiana* (Castellano et al. 1999). Specimens have been collected on two CVS random grid plots.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on two CVS plots on the Umpqua National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site on the Deschutes is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

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3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic site or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known location at Three Creeks Lake on the Deschutes National Forest should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. Locations of this species on the CVS/FIA random grid survey may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known location on the Deschutes National Forest is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Endogone acrogena* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Washington. Within the area of the Northwest Forest Plan, it is known from three historic sites in Olympic National Park, Mount Rainier National Park (Paradise Point), and Mount Baker-Snoqualmie National Forest (White Chuck Road). The last collection of this species is 1968. Fruiting bodies occur beneath the soil surface with collections occurring in September and October. It is associated with the roots of *Abies lasiocarpa* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on these plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site on the Mount Baker-Snoqualmie National Forest is still extant (Fine-scale)? Coordination with the National Park Service will be necessary to revisit sites on Park Service administered lands.
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic site or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations in Washington should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of

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the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey it may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known locations on the Mount Baker-Snoqualmie National Forest is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposeful surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Endogone oregonensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. Within the Northwest Forest Plan area, it is known from seven collections (near Philomath, near Kellogg, three collections at Cascade Head Experimental Forest, Valsetz Lake, and Van Duzer Corridor) in the Coast Range physiographic province. Fruiting bodies occur beneath the soil surface and have been collected in February, July, September, and November. This species is thought to be associated with the roots of *Picea sitchensis*, *Pseudotsuga menziesii*, or *Tsuga heterophylla*. Last recorded site was in Polk Co., Oregon in 1983 (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites on federally administered lands in the Oregon Coast Range are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic site or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate known locations in the Oregon Coast Range should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey it may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the known location in the Oregon Coast Range is a high priority.
 3. Known site surveys are a high priority if locations of this species are found.
 4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.
-

Entoloma nitidum (Rhodocybe nitida) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from less than ten sites in the Northwest Forest Plan area. Historic locations occur on the Mount Baker-Snoqualmie and Olympic National Forests and Olympic and Redwood National Parks. Very little is known about this species habitat.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic site or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey it may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known locations is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Fayodia bisphaerigera* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 14 historic collections ranging from the Olympic Peninsula (Hoh River, Lake Quinault, Quillayute River, Lake Crescent), Mount Rainier National Park, Mt Hood National Forest, Tahkenitch Lake, and near Orick California. Last recorded site was in 1993 in the Olympic National Park (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)

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2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic sites or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey it may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known locations is a high priority.
3. Known site surveys are a high priority if locations of this species are found.

4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Fevansia aurantiaca* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. Within the Northwest Forest Plan area it is known from one site on the Deschutes National Forest (Devils Lake) and one site on the Willamette National Forest (head of Hackleman Creek). Fruiting bodies occur beneath the soil surface and have been collected in August. This species appears to be associated with various Pinaceae spp., particularly *Abies lasiocarpa* and *Pseudotsuga menziesii* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If the historic sites or new locations are discovered known site surveys should be conducted to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations on the Deschutes and Willamette National Forests should occur within the next couple of years.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If this species is detected on the CVS/FIA random grid survey it may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known locations on the Deschutes and Willamette National Forests is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Galerina atkinsoniana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Several collections of this species have been made since 1997 occurring on several administrative units including Salem, Medford, and Roseburg BLM Districts, Willamette, Mount Baker-Snoqualmie, Rogue River and Siuslaw National Forests. Taxa experts have verified several of these locations through the Survey and Manage mycology lab in Corvallis. This species has also been detected on six CVS/FIA plots. Very little is known about this species habitat.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on six CVS/FIA plots on the Willamette (5 plots) and Mount Baker-Snoqualmie (1 plot) National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites to determine if species is still present and collect habitat data using known site surveys. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at recent collections located on random grid survey to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years. Conducting known site surveys at locations detected on random grid survey should occur in 2003 to collect habitat information.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species on the CVS/FIA random grid survey may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a lower priority due to the recent new locations found on the random grid survey.
 3. Known site surveys are a high priority if locations of this species are found.
 4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.
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***Galerina cerina* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Galerina cerina is thought to be widely distributed in the Northern Hemisphere. Historical locations within the NWFP area include: California (Humboldt Co., near Trinidad); Oregon (Mount Hood National Forest); and Washington (Olympic National Park, Mount Rainier National Park). This species has been recently reported from three collections on Arcata BLM at Red Mountain, identified by Dr. David Largent. It has also been detected on six CVS/FIA plots. This species has small fruiting bodies, closely associated with mosses and appears to be highly dependent on moss. Sites have been found in late-successional forests, especially in moist habitats. Fruiting bodies produced primarily in the spring or early summer. This species is likely the host for a new species of parasitic mushroom being described from the Olympic Peninsula (Castellano et al, 2003; Appendix J2 1994).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on six CVS/FIA plots on the Willamette (5 plots) and Mount Baker-Snoqualmie (1 plot) National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
3. Are the specimens from Arcata BLM actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit recently documented sites found on random grid to collect habitat data.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

3. Acquire the specimens from Arcata BLM and have them verified by another taxa expert.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years. Conducting known site surveys at locations detected on random grid survey should occur in 2003 to collect habitat information.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of recently located sites on the random grid survey will collect habitat data that can be used to target future survey efforts.
2. Locations of this species on the CVS/FIA random grid survey may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.
4. Having the specimens from Arcata BLM identified by another taxa expert will confirm these locations.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Known site surveys are a high priority if locations of this species are found.
3. Identifying the Arcata BLM specimens is a high priority.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Galerina heterocystis* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

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Galerina heterocystis is thought to be widely distributed in the Northern Hemisphere. Within the NWFP area, historical locations include: California (Redwood National Park); Oregon (Mount Hood National Forest, Rogue National Forest, Siuslaw National Forest); Washington (Mount Rainier National Park, Gifford Pinchot National Forest). Recent collections of this species have been made on Coos Bay (4 sites), Salem (2 sites), and Arcata BLM Districts. Dr. Lorelei Norvell identified the specimens from Salem BLM while David Largent identified the Arcata specimens. Currently very little is known about this species habitat, except that is often attached to the base of the mosses and lower dead stems and roots; also in the soils close by *Ranunculus* spp. Various grasses mixed with mosses seem to be its preferred neighbors (Castellano et al, 2003).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
3. Determine if all the recent collections are actually this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Acquire Arcata BLM specimens to have them identified by another taxa expert.
3. Determine if a taxa expert has identified specimens collected on Coos Bay BLM.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Conducting known site surveys at recent collections on Salem BLM should occur in 2003. Determining the status of other collected specimens should also occur in 2003.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Having taxa experts look at the recent collections will verify if these are actually this species.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Known site surveys are a high priority if locations of this species are found.
 3. Having taxa experts look at all recent collections is a high priority.
-

***Galerina sphagnicola* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

There are no known sites of this species within the Northwest Forest Plan area.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species occurs within the Northwest Forest Plan area.
2. If sites are located, determine habitat, distribution, abundance, and LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of

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the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
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***Gastroboletus imbellus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon. In the Northwest Forest Plan area, it is known from a single site on the Willamette National Forest (crest of Olallie Trail). Fruiting bodies occur beneath the soil surface with collections occurring in October. Associated with the roots of *Abies grandis*, *A. lasiocarpa*, *Tsuga mertensiana* at 1650 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

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3. Conduct known site surveys to collect habitat data if historic or new locations are found.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known location should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known location on the Willamette National Forest is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Gastroboletus ruber* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon and Washington occurring in the following physiographic provinces; Western Washington Cascades, Eastern Washington Cascades, Oregon Coast Range, Western Oregon Cascades, and Eastern Oregon

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Cascades. It is known from 25 locations occurring on the Mount Baker-Snoqualmie, Gifford Pinchot, Wenatchee, Mt Hood, Deschutes, and Willamette National Forests, and Salem BLM. Fruiting bodies occur beneath the soil surface with collections occurring in August through September. This species is thought to be associated with the roots of assorted Pinaceae above 1,350 m in elevation, particularly *Abies amabilis*, *A. procera*, *A. magnifica* var. *shastensis*, *Pinus monticola* or *Tsuga mertensiana* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys to collect habitat data if species locations are found.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years. Known site surveys to collect habitat data should occur in 2003.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the known location on the Willamette National Forest is a high priority.
3. Known site surveys are a high priority if locations of this species are found.
4. Purposeive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Gastroboletus subalpinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Oregon. Eighteen new records of this species have apparently been collected on the Mt Hood, Shasta-Trinity, Willamette, Deschutes, and Winema National Forests since 1998. This species is also known from 22 historic locations. Fruiting bodies occur beneath the soil surface and have been collected in September and October. It is associated with the roots of various Pinaceae spp. above 1,550 m elevation, particularly *Abies magnifica*, *Pinus albicaulis*, *P. contorta*, and *Tsuga mertensiana* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Are the locations of the recent collections able to relocated? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites found since 1998 to determine if species is still present. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at recently located sites (if re-locatable) to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of known site will determine if species is still extant.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the recently found known location is a high priority.
3. Conducting known site surveys at recent locations of this species are found is a high priority.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Gastroboletus turbinatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Gastroboletus turbinatus is thought to have a distribution covering Washington, Oregon, northern California, Idaho, Missouri, and Mexico. Within the NWFP area historic locations are documented from the following places: California (Lassen National Park, Shasta-Trinity National Forest); Oregon (Salem BLM, Siuslaw National Forest, Fort Clatsop National Monument; Coos Co., Mount Hood National Forest, Rogue River National Forest, Willamette National Forest, Crater Lake National Park, numerous State Parks and private lands; Washington (Wenatchee National Forest, Clallam Bay Demonstration Forest, Olympic National Forest, Olympic National Park, Mount Rainier National Park, Mount Baker-Snoqualmie National Forest). Since 1995 this species is known from four locations. One collection was made from Larch Mountain in 2000 and another in 1995 on the Six Rivers National Forest. The species range includes the following physiographic provinces; California Klamath, Oregon Klamath, and Western Oregon Cascades. This widely distributed, but rare fungus, is thought to occur in mature to old-growth forests with true firs (*Abies* sp.), *Picea engelmannii*, *P. sitchensis*, *Tsuga mertensiana*, and *T. heterophylla* from coastal forests to relatively high elevations.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Determine if collections on Mt Hood and Six Rivers National Forests are this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Determine if collections from Mt Hood and Six Rivers are this species.
4. Conduct known site surveys to collect habitat data at locations that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations on the Mt Hood and Six Rivers (if they turn out to be this species) should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If historic sites of the species are re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then strategic surveys may be considered completed according to the ROD page S&G-30 (Condition 2: The objectives of strategic surveys have been accomplished and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the recently found known location is a high priority.
3. Conducting known site surveys at recent locations of this species are found is a high priority.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Gastroboletus vividus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Oregon. In the Northwest Forest Plan area, it is known from three sites in California (Shasta-Trinity National Forest; Panther Creek area, Soda Lake, near Kings Creek) and Oregon (Rogue River

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National Forest; Jackson Gap; Crater Lake National Park, Cleatwood Picnic Area). One new collection was apparently made in 1999 on the Rogue River National Forest near Huckleberry Mountain. Another collection was made on the Willamette National Forest near Lamb Butte in 1999 and verified by the tax expert. It also occurs in the Sierra Nevada Mountains. Fruiting bodies occur beneath the soil surface and have been collected in July and September. This species is associated with the roots of various Pinaceae above 1,650 m elevation, particularly *Abies magnifica* and *Tsuga mertensiana* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Determine if the collection made from the Rogue River is actually this species.
5. Is the location information for the Lamb Butte collection re-locatable.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Determine if collection in 1999 on the Rogue River National Forest is actually this species.
4. Conduct known site surveys to collect more specific habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

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needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.
4. Determining of the collection from the Rogue River in 2000 will determine if this is actually this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the recently found known location is a high priority.
3. Conducting known site surveys at recent locations of this species are found is a high priority.
4. Purposive surveys are a low priority due to this species detectability and until the status of historic locations are determined.

***Gastrosuillus amaranthii* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California. It is known from a single site outside of the Northwest Forest Plan area in Lassen National Park. Fruiting bodies occur beneath the soil surface and have been collected in June. It is associated with the roots of various Pinaceae at 1,650 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species occurs within the Northwest Forest Plan area.
2. If sites are located, determine habitat, distribution, abundance, and LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Gastrouillus umbrinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California. In the Northwest Forest Plan area, it is known from a single site in the Klamath National Forest (Deadfall Meadows, west of Gazelle). Fruiting bodies occur beneath the soil in September. It is thought to be associated with the roots of various Pinaceae above 2,350 m elevation, particularly *Pinus monticola* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic location is a high priority.

***Gautieria magnicellaris* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Northwest Forest Plan area, this species is known from one site on the Deschutes National Forest (Lava Lake Campground) and one site on the Klamath National Forest (Deadfall Meadows). Fruiting bodies occur beneath the soil surface and have been collected from July through October. It is associated with the roots of *Pinus* spp. in Mexico and *Abies concolor* in western North America above 1,650 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic locations is a high priority.

***Gautieria othii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Northwest Forest Plan area, this species is known from one site on the Klamath National Forest (Marble Mountain Wilderness, trail to Haypress Meadows) and one site in Josephine Co., Oregon (Dutcher Creek). It is also known from Switzerland. Fruiting bodies occur beneath the soil surface and have been collected in August and October. It is associated with the roots of *Pinus ponderosa* and other Pinaceae between 800 m and 1,650 m elevation. Last recorded observance was in 1985 (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
3. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting known site on Klamath National Forest and site in Josephine County, Oregon (if on public lands) is a high priority.
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***Gelatinodiscus flavidus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently an endemic to Oregon and Washington. Five locations have been found on the Willamette National Forest since 1997. Three unverified locations have been reported from Medford BLM. Fruiting bodies have been collected from April through August. It is currently known to form scattered to gregarious sporocarps on cones, twigs and foliage of *Chamaecyparis nootkatensis*. This species consistently fruits near or under melting snowbanks (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. There have been no detections of this species on the random grid survey. One known site survey was completed on the Mt Hood National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan. Is this species obligate with Alaska yellow cedar?
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Verify recent collections to determine if this is actually this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Acquire specimens from Medford BLM to determine if these collections are actually this species.
4. Conduct known sites surveys at locations that can be re-located to collect habitat data.
5. Determine range of *Chamaecyparis nootkatensis* in the Northwest Forest Plan area and overlay reserve land use allocations.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Determining the specimens collected from Medford BLM will determine if these collections are this species.
4. Known site surveys will provide more information about this species habitat and if this species is obligate with Alaska yellow cedar.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisit of historic locations is a high priority.
3. Verifying specimens from Medford BLM is a high priority.
4. Conducting known site surveys is a high priority.

***Glomus radiatum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Northwest Forest Plan area, known from three historic sites: one on the Willamette National Forest (Lamb Butte Scenic Area, The Potholes), one on the Wenatchee National Forest (Goat Rocks Wilderness Area, Knuppenburg Lake), and one in Del Norte Co., California (3.3 miles south of the city of Smith River). Fruiting bodies occur beneath the soil surface and have been collected in June, October, and November. It is thought to be associated with the roots of *Chamaecyparis nootkatensis* and *Sequoia sempervirens* below 1,650 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are

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needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit of historic sites is a high priority.
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***Gomphus bonarii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the area of the Northwest Forest Plan, this species is known from 80 sites with 66 of these sites occurring in California, 8 in Oregon and 6 in Washington. This species is considered widespread (occurs within 8 different physiographic provinces) within the Northwest Forest Plan area. It is suspected to be associated with late successional forests or forests with late successional characteristics (Annual Species Review 2002).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.
2. What are the microsite habitat requirements for this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots.
2. Conduct known site surveys to collect additional habitat information.

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Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site surveys will provide information about this species habitat and LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Conducting known site surveys to collect habitat data is a high priority.
-

***Gomphus clavatus* (F)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from 96 locations. This species has a wide distribution occurring in 10 different physiographic provinces. It is suspected to be highly associated with late successional forests or forests with late successional characteristics.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. This species has been detected on nine CVS/FIA plots on the Willamette, Umpqua, and Gifford Pinchot National Forests. Two known site surveys were completed on the Umpqua National Forest. An additional seven locations were found while conducting purposive surveys for other Survey and Manage species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.
2. What are the microsite habitat requirements for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys on CVS/FIA plots.
2. Conduct known site surveys to collect additional habitat information.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site surveys will provide information about this species habitat and LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys to collect habitat data is a high priority.

***Gomphus kauffmanii* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from 54 total sites in Washington, Oregon, and California. It is suspected to occur in both early and late successional forests (USDA, USDI Species Review Panel 2001).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and known site surveys. This species has been detected from one CVS/FIA plot on the Shasta-Trinity National Forest. One known site survey was completed on the Umpqua National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network provides for the persistence of the species.
2. What are the microsite habitat requirements for this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys on CVS/FIA plots.
2. Conduct known site surveys to collect additional habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Additional habitat information should be collected through known site surveys in 2003.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site surveys will provide information about this species habitat and LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys to collect habitat data is a high priority.

***Gymnomyces abietis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the range of the Northwest Forest Plan, this species is known from 15 historic records on the following National Forests; Shasta-Trinity, Klamath, Willamette, Siuslaw, Deschutes, and Okanogan. The most recent observation is 1994. Fruiting bodies occur beneath the soil surface and have been collected from July through October. Although little is known about this species habitat it is thought to be associated with the roots of *Abies* spp. and possibly other Pinaceae above 1,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic locations is a high priority.
-

***Gymnomycetes nondistincta* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, collected from a single site in 1965 on Mount Hood National Forest at Phlox Point. This species fruits in September. Found in association with the roots of *Abies amabilis* and *Tsuga mertensiana* at 1,850 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

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efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic locations is a high priority.
-

***Gymnopilus punctifolius* (B in California)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, known from approximately 100 sites with the majority of these found in Oregon and Washington. The only sites in California are historic locations. This species is considered to be widespread and well distributed within the Northwest Forest Plan area with the exception of California. Fruits from August through January on well-decayed, large, conifer stumps, logs, and snags containing brown cubical rot (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on one CVS/FIA plot on the Willamette.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine association with late-successional/old-growth habitats and if the reserve network in California provides for the persistence of the species.
2. What is this range and distribution of this species in California.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots in California.

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Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated in California more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Detections of this species on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Gyromitra californica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 22 sites in the Northwest Forest Plan area occurring on the following physiographic provinces; California Cascades, Eastern Oregon Cascades, Oregon Klamath, Oregon Western Cascades, Washington Western Cascades, and Washington Eastern Cascades. Collections have been made on the Winema, Rogue River, Okanogan, Umpqua, Wenatchee, and Mount Baker-Snoqualmie National Forests and Lakeview BLM. One collection with vague location information was made on the Klamath National Forest in 1994. Several of these locations have been made in the last five years. Taxa experts have verified several of these collections. Very little is known about this species habitat.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species have been the random grid survey on CVS/FIA plots and known site surveys. This species has not been detected on any CVS/FIA plots. A total of three known site surveys on the Mt Hood National Forest were completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)

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2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites to collect habitat data by conducting known site surveys (if the site is locatable).
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Known site surveys should begin in 2003 to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of known sites to collect habitat data will provide additional information about this species habitat and possible LSOG association.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys to collect habitat data is a high priority.

***Hebeloma olympianum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently an endemic to the Olympic Peninsula in Washington. It is known from five total sites in the Olympic National Forest (Quinault RNA) and Olympic National Park (Soleduc Falls trail, Olympic Hot Springs, Whiskey Bend, Elhwa River trail). Fruiting bodies have been collected in October and November. This species is thought to be associated with the roots of various Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

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The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys to collect habitat data if species locations are found.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations on the Olympic Peninsula should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting historic sites is a high priority.
-

***Helvella crassitunicata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon and Washington. Within the area of Northwest Forest Plan, known from 4 sites in Oregon (two on the Mt Hood National Forest, one each on the Deschutes and Willamette National Forest) and 16 sites in Washington (Okanogan, Wenatchee, Gifford Pinchot, Mount Baker-Snoqualmie National Forests). The majority of these locations were found prior to 1994 with three collections from the Wenatchee and Gifford Pinchot in 1998 and 2000, respectively. Fruiting bodies have been collected from August through October. It grows on soil, especially along trails, in montane regions with *Abies* spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit recently discovered sites on the Wenatchee and Gifford Pinchot National Forests and historic sites to determine if species is still present. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys to collect habitat data if locations are found.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

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provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting known locations to relocate the species is a high priority.
3. Collection of habitat data from known site surveys is a high priority if locations of the species are found.

***Helvella elastica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the area of the Northwest Forest Plan, this species is known from 36 records in California, Oregon, and Washington. The majority of the locations are known from Washington. Over half of these sites have been found since 1997 on a variety of administrative units (Medford, Roseburg, Coos Bay BLM; Gifford Pinchot, Mt Hood, Umpqua, and Willamette National Forests). Additional historical sites have been found on Mount Rainier National Park. This species is typically gregarious on soil under conifers in damp areas. Although it does not routinely fruit in recently heavily disturbed areas, it may fruit in open areas under conifers and in areas subject to limited foot traffic. Fruiting bodies have been observed from May to October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from four CVS plots on the

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Gifford Pinchot (2 plots) and one from the Mount Baker-Snoqualmie and Olympic National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Conduct known site surveys at the locations on the four CVS plots to collect habitat data. If other locations are found conduct known site surveys at these also.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years. Collect habitat data at recently found sites on random grid survey and other locations that can be re-located.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey may provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data by conducting known site surveys will gather habitat data that can be used to target future survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit known sites is a high priority.
 3. Collection of habitat data at locations found on random grid is a high priority.
-

***Hydnotrya inordinata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon. It is known from four sites in Oregon: one on the Mount Hood National Forest (Wildcat Mountain Road), one on the Deschutes National Forest (Devils Lake), and two on the Willamette National Forest (West Lava Campground, Mount Jefferson Wilderness area). Fruit of this species occur underground and have been collected in March, April, and July. While not much is known about this species habitat it is associated with the roots of several conifers including *Abies amabilis*, *Pinus contorta*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* from 1,100 m to 2,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites on Willamette, Deschutes, and Mt Hood are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances,

association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisit of historic locations on Willamette, Deschutes and Mt Hood National Forests is a high priority.

***Hydnotrya subnix* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Washington. It is known from a single site on the Gifford Pinchot National Forest (junction of Gumboot Mountain Road and Canyon Road). This species fruiting bodies occur beneath the soil surface and have been collected in June. This species is thought to be associated with the roots of *Abies amabilis* at 1000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no collections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site on the Gifford Pinchot National Forest is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known location should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic site on the Gifford Pinchot is a high priority.

Hydropus marginellus (Mycena marginella) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Hydropus marginellus is thought to be widespread in the Northern Hemisphere but uncommon in the Pacific Northwest. Historic locations include: California (Jedediah Smith Redwoods State Park); Oregon (Salem BLM, Siuslaw National Forest, Washington (Olympic National Park, Mount Rainier National Park, Mount Baker-Snoqualmie National Forest). This species is known from four historic sites with vague location information occurring at Cascade Head Experimental Forest in Oregon, Jedediah Smith Redwoods State Park, and near Trinidad in California, and Clallam Bay on the Olympic Peninsula. One recent collection has been made in 2000 on the Headwaters Forest Reserve and verified by Dave Largent. One additional location has been collected on the Mount Baker-Snoqualmie National Forest on the random grid survey. Very little information is currently known about this species habitat, except that it is found on wood of conifers (*Abies*, *Pinus*) in forests.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include random grid surveys on CVS/FIA plots and purposive surveys. One collection of this species has been made on the Mount Baker-Snoqualmie National Forest. No locations were found while conducting purposive surveys on 690 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Determine if recent collection from Headwaters Forest Reserve is this species.
4. Collect habitat data through known site surveys at the location on the Mount Baker-Snoqualmie National Forest and Headwaters Forest Reserve (after determination of the collection).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years. Collection of habitat data at recent collections should also occur.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Determining the collection of this species from the Headwaters Forest Reserve is a high priority.
3. Collecting habitat data through known site surveys at the Mount Baker-Snoqualmie National Forest (and Headwaters Forest Reserve) is a high priority.

***Hygrophorus caeruleus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon and Washington. All locations are known to occur in higher elevations on the eastern Cascades. In the Northwest Forest Plan area, it is known from six sites: one on the Mount Hood Forest (off trail 645), one on the Deschutes National Forest (Metolius River RNA), two locations on the Wenatchee National Forest, two locations on the Winema National Forest near Dry Butte. All but the location on the Mt Hood have been collected since 1998. This species fruits from May to July and possibly in the fall. It is thought to be associated with roots of Pinaceae spp. near melting snow banks (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include random grid surveys on CVS/FIA plots and purposive surveys. There have been no detections of this species on this survey. No locations were found while conducting purposive surveys on 690 acres on the Mt Hood National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Collect habitat data by conducting known site surveys if locations are found.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting known sites is a high priority.
-

***Hygrophorus karstenii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Currently there are no known locations for this species occurring in the Northwest Forest Plan area. Appendix J2 (1994) grouped this species with the Uncommon Gilled Mushrooms – Ectomycorrhizal. The description of the distribution and range of this species is not completely known. This species habitat (for this entire group of fungi) is described as occurring in low elevation to montane coniferous forests (Appendix J2).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species occurs within the Northwest Forest Plan area.
2. If sites are located, determine habitat, distribution, abundance, and LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale)..

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
-

***Hygrophorus vernalis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to California and Washington. In the Northwest Forest Plan area, it is known from three sites in the Olympic National Park (Deer Lake, Hell Creek, Elwha Campground) and one site in the Shasta-Trinity National Forest Panther Creek Meadows). This species fruits from April to July. It occurs in the soil in association with roots of Pinaceae spp. near melting snow banks. Last recorded site was in 1993 (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include random grid surveys on CVS/FIA plots and purposive surveys. There have been no detections of this species in this survey. No locations were found while conducting purposive surveys on 637 acres on the Mt Hood National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic locations is a high priority.

***Hypomyces luteovirens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 11 collections in the Northwest Forest Plan area. Eight of these locations are historic collections with vague locality data. The other three collections were made on Salem BLM in 1996 in the Eagle Creek area, on the Wenatchee National Forest in 1996 and near Takhlakh Lake on the Gifford Pinchot National Forest in 2000. This species is a parasite on other fungal species. This species may be overlooked in the field due to its parasitic habit.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Currently there have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are fungal host species associated with late-successional/old-growth habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. If collections are made determine what host fungal species?

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If locations of this species are detected on the CVS/FIA random grid survey it may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

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3. Determination of host fungal species may help determine if this species is associated with late-successional/old-growth habitat.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisit of known sites is a high priority.
 3. Trying to determine fungal host species is a high priority.
-

***Leucogaster citrinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to coniferous forests of the Pacific Northwest. This species is currently known from over 20 locations with 18 of these found recently on the random grid survey. This species fruits beneath the soil surface from August through November (although one collection from the random grid survey was made in the spring). Found in association with the roots of *Abies concolor*, *A. lasiocarpa*, *Pinus contorta*, *P. monticola*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* from 280 to 2,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on 18 CVS/FIA plots from the Umpqua, Siuslaw, Gifford Pinchot, Olympic, Willamette, and Six Rivers National Forests, and Salem BLM District.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known site found on the random grid to collect habitat data by conducting known site surveys.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Random grid surveys on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

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provides for a reasonable assurance of persistence. If the random grid survey does not answer the questions about LSOG association then fine scale surveys collecting habitat data would be necessary.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Conducting known site surveys at locations found on random grid will provide more detailed habitat information that will provide additional information about LSOG association.
2. Locations of this species detected on the CVS/FIA random grid survey may provide enough information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at locations found on random grid is a high priority.

***Leucogaster microsporus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Northwest Forest Plan area. It is known from 11 sites occurring in California, Oregon, and Washington. Sites occur in the Coast Range, Western Cascades, and Oregon Klamath physiographic provinces. This species' fruiting bodies have been collected from August through November. It fruits beneath the soil surface and is found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 330 to 1,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from one CVS plot on the Mt Hood National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Collect habitat data through known site surveys at new location on Mt Hood and if other sites are located.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey may provide some information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting historic locations is a high priority.

3. Collecting habitat information through known site surveys at the location on the Mt Hood National Forest is a lower priority unless additional locations are found.

***Macowanites chlorinosmus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from 12 historical sites in Oregon (Cape Meares, Cape Lookout, Cascade Head Experimental Forest, Boardman State Park), Washington (near Quinault Lake), and California (Prairie Creek Redwoods State Park). This species is primarily found in association with the roots of *Picea sitchensis* and *Tsuga heterophylla* below 200 m elevation. Fruiting bodies have been collected in January, July, August, September, October, and November. The last collection of this species was in 1992 in Humboldt Co., California (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of

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the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Macowanites lymanensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Washington. In the Northwest Forest Plan area, it is known from a single site on the Wenatchee National Forest (Glacier Peak Wilderness Area, Lyman Lake, campsite on eastern shore of lake near inlet of Cloudy Pass Creek). Found in association with the roots of *Abies amabilis* and *A. lasiocarpa* at 1,700 m elevation. Fruits for this species have been collected in September (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Macowanites mollis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon and Washington. In the area of the Northwest Forest Plan, it is known from one site in Multnomah Co, Oregon (Larch Mountain, Columbia River Gorge NSA) and one site in Mount Rainier National Park (lower Tahoma Creek at confluence with Nisqually River). The last collection of this species was made in 1989. Fruiting bodies have been collected from July to September. It is associated with the roots of *Abies grandis*,

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Pseudotsuga menziesii, and *Tsuga heterophylla* above 1,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Marasmius applanatipes* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California. It is known from two sites within the Northwest Forest Plan (Shasta-Trinity National Forest, Sand Flat on the flanks of Mount Shasta; Klamath National Forest, Carter Meadows). These two locations were collected prior to 1983. Fruiting bodies have been collected in October in Pinaceae litter in forests above 2,000 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Two collections have been tentatively identified as this species on the Klamath and Shasta-Trinity National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Verify if identifications of the two collections are correct.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Have specimens collected from two FIA plots verified by another taxa expert.
4. If the collections are this species then conduct known site surveys to collect additional habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

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provides for a reasonable assurance of persistence. Efforts to re-locate the known locations or collect habitat data from recent locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.
3. Conducting known site surveys at two locations is a high priority if these are actually this species.

***Martellia fragrens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from three sites in the Northwest Forest Plan area: Humboldt Co., CA (near Big Hill), the Rogue River National Forest (1.4 miles east of Dutchman Peak along Siskiyou Summit Road), and the Willamette National Forest (Lamb Butte Scenic Area, Olallie Trail). It is associated with the roots of *Pseudotsuga menziesii* or *Tsuga mertensiana* from 1,500 to 2,500 m elevation. This species fruits from June through November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Currently there have been no detections of this species on the random grid survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate the site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Martellia idahoensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site on the Siuslaw National Forest (Mary's Peak Campground) and one on the Willamette National Forest (Lamb Butte Scenic Area, Olallie Trail). This species has not been observed since 1968. It is thought to be associated with the roots of *Abies amabilis*, *A. lasiocarpa*, *A. procera*, *Picea engelmannii*, and *Tsuga mertensiana* from 1,200 to 1,650 m elevation. Fruiting bodies have been collected from August to October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Two collections from one CVS plot on the Six Rivers National Forest have been tentatively identified as this species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Verify if specimens collected from Six Rivers National Forest are actually this species.
4. Verify if specimens collected from Six Rivers National Forest are actually this species.
5. Conduct known site surveys at FIA plot where these specimens were collected if the collections are this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. If the specimens collected from the Six Rivers National Forest are this species then known site surveys can be conducted to collect habitat information.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.
3. Conducting known site surveys at Six Rivers National Forest FIA plot is a high priority if the collections are identified as this species.

***Mycena hudsoniana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon and Washington. Within the Northwest Forest Plan area, it is known from six sites in Washington (Olympic Peninsula and Washington Cascades) and one site in Oregon (Willamette National Forest, H.J. Andrews Experimental Forest, Watershed II). It has been recently collected during spring 2001 surveys on two CVS plots. This species is thought to be restricted to conifer forests and usually found on woody debris or duff near snow banks above 700 m elevation. Fruiting bodies have been collected from April through July (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has been collected on two CVS plots on the Gifford Pinchot National Forest. The Mt Hood National Forest surveyed approximately 700 acres and did not find any locations.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys at both Gifford Pinchot National Forest CVS plots where this species was collected, if the specimens are actually this species.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Mycena overholtsii* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from well over 100 sites in the Northwest Forest Plan. The majority of these locations have been found since 1999 on the Winema, Okanogan, and Wenatchee National Forests. This species has a wide distribution with locations from northern Washington to southern Oregon. It is thought to occur primarily in late-successional and old-growth forests but has also been found in younger forests. This species appears to be restricted to conifer forests above 1,000 m elevation, particularly those with *Abies* spp., and usually found on decayed wood near snow banks or just after snow melt. Fruiting bodies have been collected from May through July (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. Currently this species has been found on one CVS plot on the Winema National Forest. More locations are expected since many collections from this survey have not been identified yet. In addition there have been over 30 known site surveys completed for this species. Purposive surveys located 11 additional sites on the Mt Hood and Umpqua National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete ongoing random grid survey on CVS/FIA plots.
2. Continue to conduct known site surveys at new locations.
3. Develop a potential habitat map using known site survey data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Additional known site surveys will collect more habitat data that can be used to develop/calibrate habitat model maps.
3. Development of a potential habitat map will show spatially the amount of potential habitat in the Northwest Forest Plan area. This can also be overlaid with land use allocation maps to get an estimate of how much potential habitat occurs in reserves.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Conducting known site surveys is a high priority.
 3. Development of a potential habitat map is a high priority.
-

***Mycena quinaultensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from 21 historical locations in Washington (Olympic, Mount Baker-Snoqualmie, Okanogan National Forests), Oregon (Mt Hood and Willamette National Forests, and Josephine County) and California (Six Rivers National Forest and Redwoods State Park). Recent collections have been made in Headwaters Forest Reserve on the Arcata BLM lands. Found in clusters on senescent conifer needles or uncommonly on decayed wood in conifer forests. Fruiting bodies have been collected from late May through December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Determine if recent collections at Headwaters are this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Have specimens collected from Headwaters verified by another taxa expert.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances,

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association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Verification of collected specimens from Headwaters will provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.
3. Verification of Headwaters specimens is a high priority.

***Mycena tenax* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 20 historic sites with vague location information. Recent collections of this species have been made on Salem (near Green Peak and Bald Mountain) and Arcata BLM (Lake Mountain and Headwaters Forest Reserve). This species occurs in conifer forests in the needle duff under *Abies*, *Psedotsuga*, *Picea* and *Sequoia*, fruiting in the spring and autumn (Castellano et al. 2003). Recent collections have been tentatively identified as this species from the random grid survey in California.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Collections from seven FIA plots in northern California have been tentatively identified as this species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Locate more sites to determine range within Northwest Forest Plan, habitat, distribution, abundance, and LSOG association. (fine- to mid-scale).
3. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
4. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Determine if collections from Salem, Arcata, and California FIA plots are actually this species.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.

2. Revisiting historic locations is a high priority.
 3. Verification of specimens from recent collections and random grid survey is a high priority.
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***Mythiomyces corniepes* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from nine historical sites (Mt Hood, Willamette, Mount Baker-Snoqualmie National Forests, Olympic National Park, Mt. Ranier National Park) within the Northwest Forest Plan area. This species is found along margins of bogs, among mosses or on wet soil under conifers and *Alnus* spp. All but one of these sites was reported prior to 1993.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys

would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Neolentinus adhaerens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site on the Olympic National Park (Soleduc Falls trail). Also known from Europe. Fruiting bodies are suspected to be visible in October and November and are saprophytic on conifer logs (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic location is a high priority.

***Neolentinus kauffmanii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from several historical collections from Washington (Olympic Peninsula), Oregon (Siuslaw National Forest), and California (Redwoods National Park). Two recent collections were made near Cascade Head in 1999. Locations are primarily coastal or having a coastal influence. This species is saprophytic, causing brown

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pocket rot in *Picea sitchensis*. This species apparently fruits throughout the year (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Nivatogastrium nubigenum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 200 total sites in the Northwest Forest Plan area. Most of these have been found in the last few years and have been primarily collected on the Winema National Forest. Collections have also been made on the Umpqua, Shasta-Trinity, Rogue River, Klamath, Willamette National Forests, and Lakeview BLM) Thought to occur primarily in late-successional stands, although it may also appear in young stands (USDA, USDI Species Review Panel 2001). This species is currently endemic to California and Oregon. Fruiting bodies occur on the surface of rotten *Abies* logs at higher elevations (above 1,300 m). Fruits have been collected from May through early October (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site and purposive surveys. There has been one detection of this species on a CVS plot in the Winema National Forest. Three known site surveys have been completed on the Umpqua National Forest and four new locations were found while conducting purposive surveys for other fungi species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys (Broad scale)
2. Collect habitat data through known site surveys at those locations that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be

relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site surveys will collect additional habitat information that may be able to be used to answer questions about late-successional/old-growth association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Conducting known site surveys to collect additional habitat.

***Octavianina cyanescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon. Within the Northwest Forest Plan area, it is known from one site on the Willamette National Forest (English Mountain, above The Potholes). This species has been found associated with *Tsuga mertensiana* at 1,900 m elevation. Fruiting bodies have been collected in September (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from one CVS plot on the Olympic National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Octavianina macrospora* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. In the Northwest Forest Plan area, it is known from one site on the Mount Hood National Forest (Twin Bridges campground). This species was last collected in 1937. This species is thought to be found in association with roots of *Tsuga heterophylla*. This species fruits beneath the soil surface with fruits being observed in August (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic location is a high priority.
-

***Octavianina papyracea* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California. It is known from two historic sites in the Northwest Forest Plan area at Spruce Cove, near Trinidad and in Fern Canyon in Redwoods State Park, near Orick. The last collection of this species was made in 1956. This species is thought to occur in association with the roots of Pinaceae in forests dominated by *Sequoia sempervirens* below 650 m elevation. Fruiting bodies occur beneath the soil surface and occur in November and December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Otidea leporina* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 70 sites within the Northwest Forest Plan area. This species has a wide distribution ranging from the Mount Baker-Snoqualmie National Forest to the Shasta-Trinity National Forest. The majority of these sites have been found since 1999. This species is associated with *Picea* spp., *Tsuga heterophylla*, and *Pseudotsuga heterophylla*. Fruiting bodies have been collected from October through December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been tentatively identified on two FIA plots on the Six Rivers National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete ongoing random grid survey on CVS/FIA plots.
2. Collect habitat data by conducting known site surveys at those locations that are can be relocated.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Conducting known site surveys is a lower priority until the random grid survey is completed.
-

***Otidea smithii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is historically known from one site in California (Earl Lake State Park), one site in Oregon (Woods Creek Road in Benton County), and two sites in Washington (Mount Rainier National Park, lower Tahoma Creek; Gifford Pinchot National Forest, Camp Creek Falls trail). Recent collections of this species have occurred, and been verified, on the Wenatchee, Willamette, Rogue River, Gifford Pinchot National Forests and Salem and Roseburg BLM Districts. It is solitary to gregarious on exposed soil, duff, or moss under *Populus trichocarpa*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. Fruiting bodies have been collected from August through December (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Determine if the sites of recent collections can be relocated. If they can then conduct known site surveys to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations and collection of habitat data should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will collect additional habitat information that may be used to target future surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Phaeocollybia attenuata* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 sites within the Northwest Forest Plan area. Many new locations (67 sites) have been found in recent years occurring primarily in the Oregon Coast Range physiographic province, with a few in the Cascades and in California. All locations in Washington were collected prior to 1996. This species is endemic to western North America from British Columbia south to Marin County, found scattered in humus soil and with mosses under conifers such as *Picea sitchensis* in mid to late autumn (Castellano et al. 2003).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. Two new locations were found conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.
3. What is the range of the habitats that this species occurs in?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete ongoing random grid survey on CVS/FIA plots.
2. Collect habitat data by conducting known site surveys at those locations that are can be relocated.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site surveys will provide additional habitat information that can be used to determine the range of habitats where this species occurs and its association with late-successional/old-growth forests.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Conducting known site surveys is a high priority.

***Phaeocollybia californica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. Within the area of the Northwest Forest Plan, it is known from approximately 20 total sites in Washington, California, and Oregon. New locations have been found on Salem, Coos Bay, Roseburg (not verified), Eugene BLM Districts. This species is associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. Fruiting bodies have been collected in March, May, October, and November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys at locations that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations and collect habitat data should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

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efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will provide additional habitat information that can be used to determine the range of habitats where this species occurs and its association with late-successional/old-growth forests.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
 3. Conducting known site surveys is a high priority.
-

***Phaeocollybia dissiliens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon. Within the Northwest Forest Plan area, it is known from eight historical sites in Lane (Eugene BLM, Bunker Hill), Benton, Tillamook, and Lincoln Counties. Recent collections of this species have occurred on Eugene, Coos Bay, Salem BLM Districts and the Willamette National Forest. This species is associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. Fruiting bodies have been collected in October and November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

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3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys at locations that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Known site surveys will provide additional habitat information that can be used to determine the range of habitats where this species occurs and its association with late-successional/old-growth forests.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
 3. Conducting known site surveys is a high priority.
-

***Phaeocollybia fallax* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 91 sites in the Northwest Forest Plan area. Many new sites have been found in recent years on the Arcata, Coos Bay and Salem BLM Districts and Willamette and Mt Hood National Forests. Locations (including historical sites) occur in the following physiographic provinces; California Coast Range, Oregon Coast Range, Oregon Western Cascades, Washington Western Cascades (all historical), Washington Western Lowlands (all historical), and Washington Olympic Peninsula (all historical). This species is endemic to western North America, restricted to localized areas in mature to old-growth forests in coastal, inland, and montane regions. Found scattered to gregarious in highly humus soil in mixed coniferous *Abies*, *Picea*, *Pseudotsuga*, and *Tsuga* in autumn and early winter (Castellano et al. 2003).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. Three new locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete ongoing random grid survey on CVS/FIA plots.
2. Conduct known site surveys to collect habitat information at sites that can be relocated.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Conducting known site surveys is a high priority.
-

***Phaeocollybia gregaria* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one historical site on the Siuslaw National Forest (Cascade Head Experimental Forest) and a recent collection in 1999 on Salem BLM (near Thomas Creek). It is associated with the roots of *Picea sitchensis* and *Pseudotsuga menziesii*. Fruiting bodies occur in October and November (Castellano et al. 1999).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Appendix 2 – Fungi

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic location is a high priority.

***Phaeocollybia kauffmanii* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the area of the Northwest Forest Plan area, this species is known from 136 sites in Washington (15 historical sites), Oregon (80 sites, including 20 historical), and California (41 sites, including 34 historical). Recent collections have occurred on Eugene, Coos Bay, Medford, and Salem BLM Districts and Mt Hood and Siuslaw National Forests. It is also known from British Columbia and Idaho. This species is associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. Fruiting bodies have been collected from late September through early January (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there has been one collection tentatively identified as this species on a FIA plot on the Six Rivers National Forest. One new location was found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)

Appendix 2 – Fungi

2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Is there enough information to determine which sites are needed for high priority management.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys to collect habitat information at sites that can be relocated.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.
3. Conducting known site surveys is a high priority.

***Phaeocollybia olivacea* (F in Oregon, E in Washington and California)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known historically from over 100 total sites, including: Washington (Olympic National Park), Oregon (Salem SLM, Siuslaw National Forest, Mount Hood National Forest, Roseburg BLM) and California (numerous state lands, Rogue River National Forest, Six Rivers National Forest). Recent collections of this species have been made on several administrative units including; Salem, Coos Bay, Medford, Eugene, Arcata BLM Districts, and Rogue River, and Mt Hood National Forests. No recent collections have occurred in Washington or California. This species is endemic to western United States from central Oregon coast south to Santa Cruz

County, California. It is found scattered or in arcs in mixed forests containing *Fagaceae* or *Pinaceae* in coastal lowlands in autumn (Castellano et al. 2003).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan with emphasis in Washington and California.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete ongoing random grid survey on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Conducting known site surveys is a high priority.

***Phaeocollybia oregeonensis* (*Phaeocollybia carmanahensis*) (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, it is known from two historical sites in Oregon on the Mount Hood National Forest (Wildcat Mountain and Larch Mountain). Four new locations have been found on BLM lands in Oregon (Salem, Eugene, and possibly Coos Bay) and the Gifford Pinchot National Forest. This species also occurs in British Columbia. This species is associated with the roots of *Abies amabilis*, *Tsuga heterophylla*, *Pseudotsuga menziesii*, and *Picea sitchensis* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Phaeocollybia piceae* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from approximately 40 locations with most recent locations found on Salem and Coos Bay BLM. One additional location has been found in California on Arcata BLM (Headwaters Forest Reserve). Historic locations with vague location information are known from the Siuslaw National Forest and Olympic National Park. This species is associated with the roots of *Abies amabilis*, *Tsuga heterophylla*, and *Pseudotsuga menziesii* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.
3. Conducting known site surveys is a high priority.

***Phaeocollybia pseudofestiva* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 40 sites within the Northwest Forest Plan area, including: California (numerous private and state lands), Oregon (Siuslaw National Forest, Mt. Hood National Forest, Salem BLM, Willamete National Forest); and Washington (Olympic National Park). Recent collections have been made on Salem, Coos Bay, and Medford BLM Districts and Willamette and Mt Hood National Forests. In addition, there are 20 historical sites with vague location information. This species is endemic to western North America occurring from British Columbia, Canada, south to California. It is found scattered to caespitose under mature mixed conifers and hardwoods October through December.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

Appendix 2 – Fungi

3. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
 3. Conducting known site surveys is a high priority.
-

***Phaeocollybia scatesiae* (B)**

KNOOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known historically from two sites in California (near Crescent City, Van Damme State Park), 2 sites in Washington (Copalis Beach, and Twin Creek RNA), and 11 sites in Oregon. Recent collections have occurred on Salem and Coos Bay BLM Districts, and the Mt Hood National Forest. One additional site has been documented in California on the King Peak NCA. It is associated with the roots of *Abies* spp., *Picea sitchensis*, and *Vaccinium* spp. from sea level to 1,250 m elevation (Castellano et al. 1999). This species fruits in March, May, October, and November.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. One new location was found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Conduct known site surveys at recent locations to collect habitat information.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Due to recent collections visiting historic locations is a lower priority.
3. Conducting known site surveys at recent collections is a high priority.

***Phaeocollybia sipei* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. It is known from seven historical sites in Benton, Lane, and Lincoln Counties. Recent collections have occurred on Salem, Eugene, and Coos Bay BLM Districts. This species is associated with the roots of *Abies amabilis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. This species fruits in October and November (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. No locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Phaeocollybia spadicea* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from a total of 55 locations occurring California (9 sites in the Cascades and Coast Range, including 8 historical), Washington (3 historical sites from Olympic Peninsula), and Oregon (43 sites in Klamath, Western Cascades, and Willamette Valley, including 10 historical). Like other species in this genus, it is associated with coniferous forests. This species fruits primarily from October through November.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Currently there have been no detections of this species on the random grid survey. Two new locations were found while conducting purposive surveys on approximately 2,400 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Collect habitat data by conducting known site surveys at sites that can be relocated.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can

provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Conducting known site surveys to collect habitat data is a high priority.
-

***Phellodon atratus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Western United States and known from 27 historical collections with vague location information, including: Washington (Olympic National Park, Mt. Rainier National Park); Oregon (Siuslaw National Forest, numerous state lands); and California (Six Rivers National Forest, numerous state lands). It has also been recently collected on Roseburg BLM in 1997 at North Myrtle Headwaters and in Headwaters Forest Reserve on Arcata BLM in 2000. Very little is known about this species habitat, except that is found scattered to gregarious, often forming fused clusters, on ground under conifers. This species fruits in autumn and winter.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Currently there have been no detections of this species on the random grid survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.
3. Determine if recent collections are this species by having a taxa expert identify them.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites on federal lands will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Verification of recent collections will provide new information about this species that can be used to record habitat data.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
2. Revisiting the historic locations is a high priority.

***Pholiota albivelata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from 27 historical sites in California, Oregon, and Washington. The last collection from these sites

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was made in 1987 on the Mt. Baker-Snoqualmie National Forest. A new collection was made near Green Peak on Salem BLM. This saprophytic species is restricted to conifer forests occurring on large woody debris, duff, or litter (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Currently there have been no detections of this species on the random grid survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with

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late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Podostoma alutaceum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from five historical locations (Crescent City, CA, Trinidad, CA, Patricks Point State Park, Mendocino Woodlands State Recreation Area, on in Washington on the Mount Baker-Snoqualmie National Forest (south side of Baker Lake). Habitat for this species is coniferous forests, occurring on dead wood and possibly with the roots of trees, fruiting in autumn (Castellano et al 2003).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected from on CVS plot on the Siuslaw National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

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provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Polyzellus multiplex* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 59 sites in the Northwest Forest Plan area. This species is found throughout the Northwest Forest Plan area and occurs elsewhere in the United States (south to New Mexico and east to Maine). Recent collections have been made on several administrative offices. It occurs in association with roots of *Abies* spp. in late-successional, mid-elevation, montane, conifer forests (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys (Broad scale)
2. Collect habitat data by conducting known site surveys at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Known site survey data will be used to develop a model showing potential habitat within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.

***Pseudoaleuria quinaultiana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon and Washington. Within the NFP area, it is known from two sites in Oregon (Siuslaw National Forest, Drift Creek Wilderness; Silver Falls State Park) and three sites in Washington (Olympic National Park, east of Forks; Rugged Ridge Trail; Olympic National Forest, Quinault rainforest trail). Last recorded site was in 1993 on the Siuslaw National Forest. This species occurs on disturbed microsites (trail sides, recent windthrow mounds) in low elevation old-growth forests that include *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Currently there have been no detections of this species on the random grid survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete ongoing random grid survey on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should also occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification, and analysis of data is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria abietina* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from six historic sites within the Northwest Forest Plan Area, including: Washington (Mt. Rainier National Park); Oregon (Medford BLM); California (state lands). Three recent collections have occurred on Salem, Roseburg and Medford BLM Districts. This species is thought to be associated with the roots of various Pinaceae and fruits in May and September through November.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. One specimen from a FIA plot on the Shasta-Trinity has been tentatively identified as this species. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Determine validity of three recent collections on Salem, Roseburg and Medford BLM.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

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provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria amyloidea* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

*This species is endemic to the Pacific Northwest. Within the Northwest Forest Plan, it is known historically from 5 sites in Washington, 2 sites in Oregon, and 2 sites in California. Approximately 10 recent collections have been made on the Okanogan, Willamette, Umpqua, Wenatchee, Gifford Pinchot, and Klamath National Forests and Arcata BLM in Headwaters Forest Reserve. Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).*

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. No locations of this species have been detected on CVS/FIA plots. Two locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)

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2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Determine validity of recent collections to determine if the specimen is actually this species and accuracy of location to determine if habitat data can be collected.
4. Conduct known site surveys at recent collections if these sites are this species and they can be located.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Conducting known site surveys will collect additional habitat data that can be used to target future survey efforts and possibly develop potential habitat maps.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

3. If recent collections are this species and can be relocated, then known site surveys are a high priority.

***Ramaria araiospora* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 80 sites in the Northwest Forest Plan area. Many new locations have been discovered in recent years. Locations have been found in the Oregon Western Cascades (61 sites), Oregon Coast Range (14), California Klamath (2 sites), and California Coast Range (3 sites). This species occurs in both late-successional and non-late-successional habitat (2002 Annual Species Review Step 2 worksheet). It fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has been located on 10 CVS plots on the Umpqua and Siuslaw National Forests and Coos Bay BLM. In addition, five locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Collect habitat data by conducting known site surveys at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Collecting additional habitat data through known site surveys is a high priority.
-

***Ramaria aurantiisiccescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 30 sites in the Northwest Forest Plan area with about one-third of these historical with vague location information. Within the Northwest Forest Plan area this species has been collected from 22 locations from the California Coast Range, California Klamath, Oregon Coast Range, Oregon Eastern Cascades, Oregon Western Cascades, and Washington Eastern Cascades physiographic provinces. Fruits in humus or soil and matures above the surface of the ground and can be found in October. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).

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2. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Collecting additional habitat data through known site surveys is a high priority.

Ramaria botryis v aurantiiramosa (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was thought to be endemic to Washington but eight recent collections have been made from the Umpqua and Winema National Forests in Oregon and on California BLM administered lands. Within the Northwest Forest Plan area, this species was previously known from one historic site in Lewis County, WA (Pleasant Valley). Fruits in October in humus or soil and matures above the surface of the ground. Associated with *Pseudotsuga menziesii* and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
- 2.

***Ramaria celerivirescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from 58 sites in California, Oregon, and Washington. Many of these sites have been collected in recent years. This species has a wide distribution with documented locations in the following physiographic provinces; California Coast Range, Oregon Coast Range, Oregon Klamath, Oregon Western Cascades, Washington Eastern Cascades, and Washington Western Cascades. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla* (Castellano et al. 1999). Locations of this species have been found in both late-successional/old-growth and non-late-successional/old-growth habitats.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on six CVS/FIA plots on the Gifford Pinchot, Umpqua, Mt Hood, and Siuslaw National Forests. An additional 14 locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Collecting additional habitat data through known site surveys is a high priority.
-

***Ramaria claviramulata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California and Washington. Within the Northwest Forest Plan area, this species is known from one historic site on the Mt. Baker-Snoqualmie National Forest (Goldmyer Hot Springs trail) and one site in Mendocino County, CA (Van Damme State Park). Fruits in autumn in humus or soil and matures above the surface of the ground. This species is thought to be associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. One specimen has been tentatively identified from a FIA plot on the Six Rivers National Forest. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria concolor f. marrii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site on the Mt. Baker-Snoqualmie National Forest (Sloan Creek campground) and one site in California with vague locality information. No records currently occur in the ISMS database. Also known from Idaho. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria concolor f. tsugina* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was previously known from one historic site in the Northwest Forest Plan area (Grays Harbor County, Washington) with vague location information. Recent collections have been made, but with questions regarding their verification, on Coos Bay BLM and in Headwaters Forest Reserve on Arcata BLM. Found in autumn along margins of bogs among mosses or on wet soil under conifers and *Alnus* spp.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Are the recent collections actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Verify collections made from Coos Bay and Arcata BLM.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network

provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site (if any additional location information can be collected) will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Verification of voucher specimens from Coos Bay and Arcata will determine if recent collections are this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic location is a high priority.
3. Verifying recent collections is a high priority.

***Ramaria conjunctipes v. sparsiramosa (R. fasciculata var. sparsiramosa)* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was originally thought to be endemic to California and Washington, but recent collections have been made on the Umpqua National Forest and Coos Bay BLM. Taxa experts have verified all of these collections. Within the Northwest Forest Plan, this species was originally known from historic two sites in Jedediah Smith State Park in California and one site in Mason Co., Washington. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. One specimen from a FIA plot on the Six

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Rivers has been tentatively identified to this species (but not variety). Two locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

2. Revisiting the historic locations is a high priority.
-

***Ramaria coulterae* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently known from less than 10 locations within the Northwest Forest Plan. Historic locations include: Oregon (Medford BLM, Deschutes National Forest, Winema National Forest). Recent collections have been made on the Winema and Deschutes National Forests and Medford BLM. Very little is known about species habitats. Fruiting occurs in spring and early summer (Castellano et al., 2003).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

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efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria cyaneigranosa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to the Pacific Northwest. A total of 22 records are known of these species occurring in the Oregon Western Cascades, Oregon Willamette Valley, and Washington Western Cascades physiographic provinces. Historically this species is known from three sites in California (Big Lagoon, Big Hill Road, Lord Ellis Summit), two sites in Oregon (Roseburg BLM, Irwin Rocks RNA; Salem BLM, Scattered Tracts south), and three sites in Washington (Olympic National Park, Lake Creek trail; Mount Rainier National Park, lower Tahoma Creek, Ipsut Creek). Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999). Five new locations were found during fall 2000 pre-disturbance surveys on the Gifford Pinchot, Umpqua, and Siskiyou National Forests.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

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3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria gelatiniaurantia* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from two historic sites in California (Jedediah Smith State Park, Elder Creek in Mendocino County), three

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historic sites in Oregon (all on the Mt Hood National Forest and three historic sites in Washington Soleduc Falls, Olympic National Park, Ipsut Creek, Mt Rainier National Forest, Gifford Pinchot National Forest). Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp. and *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. One specimen from a FIA plot on the Six Rivers National Forest has been tentatively identified as this species. An additional five locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria gracilis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from two sites in California (Fickle Hill near Arcata; Jackson State Forest in Mendocino County), one site in Oregon (Beaver Creek in Benton County), and one site in Washington (Friday Harbor, San Juan County). Also known from New York and Europe. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. One specimen from a FIA plot on the Shasta-Trinity has been tentatively identified. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.

2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria hilaris v. olympiana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from one historic site in Grays Harbor County, WA near Humptulip. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria largentii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known historically from one site in California, two sites in Oregon, and nine sites in Washington. Recent collections have occurred on the Willamette, Umpqua, and Wenatchee National Forests and Medford, Roseburg and Arcata BLM. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pinus monticola*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. One location was found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria lorithamnus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from one historic site on Mount Rainier National Park. No records currently are in the ISMS database. Also known from Australia and New Zealand. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria maculatipes* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Recent collections of this species have been made on the Mt Hood, Winema, and Willamette National Forests. Historically this species is also known from two sites in California (Haypress Meadows-Klamath National Forest and Jackson State Forest in Mendocino County) and one site in Washington (Mason Lake). Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. A FIA plot on the Six Rivers National Forest has a collection that has been tentatively identified as this species. No

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locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria rainierensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is historically known from one site in Humboldt County, CA (Patrick's Point State Park) and one site on Mount Rainier National Park (Panther Creek, near intersection of road 123). One recent collection was made, and verified, from Coos Bay BLM. Fruits **in autumn** in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla* (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey

efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria rubella v. blanda* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site in Humboldt County CA (Patrick's Point State Park) and one site in San Juan County WA (Friday Harbor). Also known from the Appalachian Mountains. Fruits in autumn on wood in conifer forests (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. Two FIA plots (one each on Mendocino and Six Rivers National Forests) have had a collection that has been tentatively identified as this species. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria rubribrunnescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is historically known from three sites; Washington - Mount Rainier National Park, Ipsut Campground, California - Jackson State Forest, and Oregon - Roseburg BLM, Tater Hill. Six collections have been made recently on the Umpqua National Forest and Medford and Coos Bay BLM. Fruits in autumn in humus or soil and matures above the surface of the ground. Associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Ramaria rubrievanescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 39 locations within the Northwest Forest Plan area. Several historical sites with vague location information are also known. This species has a wide distribution as it occurs in nine different physiographic provinces (California Coast Range, California Klamath, California Cascades, Oregon Coast Range, Oregon Klamath, Oregon Western Cascades, Oregon Eastern Cascades, Washington Western Cascades, and Washington Eastern Cascades). Known from eastern North America and eastern Oregon as well as the Pacific Northwest. Fruits in autumn in humus or soil and matures above ground, associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site and purposive surveys. This species has not been detected five CVS plots on the Deschutes and Mount Baker-Snoqualmie National Forests. Three known site surveys have been completed. One location was found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be

relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Collecting additional habitat data through known site surveys is a high priority.
-

***Ramaria rubripermanens* (B in Washington and California; D in Oregon)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. Within the Northwest Forest Plan area, it is known from over 150 recent and historical sites. This species has a wide distribution across the Northwest Forest Plan area. Fruits in autumn in humus or soil and matures above the ground. Associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site and purposive surveys. This species has not been detected on one CVS/FIA plot from the Mt Hood National Forest. One known site survey has been completed. Five locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Collecting additional habitat data through known site surveys is a high priority.

***Ramaria spinulosa v. diminutiva* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from two historic sites; Mendocino County, California (Van Damme State Park) and on the Mt. Baker-Snoqualmie National Forest (Glacier Peak Wilderness Area, Sulphur Creek) in Washington. It currently is not known from Oregon. Also occurs in Europe. Fruits in autumn in humus or soil and matures above the ground. Associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the

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CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Ramaria stuntzii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. Within the Northwest Forest Plan, it is known from over 80 recent and historical sites in California, Oregon, and Washington. This species is known from the California Coast Range, California Klamath, Oregon Coast Range, Oregon Western Cascades, Oregon Klamath, and Washington Olympic Peninsula physiographic provinces. Fruits in autumn in humus or soil and matures above the ground associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. Three locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS/FIA plots (Broad Scale).
2. Conduct known site surveys to collect habitat information at sites that can be relocated.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Collecting additional habitat data through known site surveys is a high priority.
-

***Ramaria suecica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from two historical sites in Oregon (Roseburg BLM, Medford BLM) with vague location information. Very little is known about this species habitat, except that it occurs on forest litter and fruits in autumn.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic location is a high priority.

***Ramaria thiersii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from one site in Mendocino County, California (Jackson State Forest). Also known from Idaho and the Sierra Nevada Range of California. Fruits in June in humus or soil and matures above the ground; associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate this site.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic location is a high priority.
-

***Ramaria verlotensis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California and Washington. Within the Northwest Forest Plan, it is known historically from one site in Jedediah Smith State Park and one site on the Mt. Baker-Snoqualmie National Forest (old campground called Verlot). Last reported observance was in 1982. One recent collection has been made that has been identified as this species on Headwaters Forest Reserve on Arcata BLM. Fruits in autumn in humus or soil and matures above the ground. Associated with Pinaceae spp. (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the CVS/FIA plots. No locations were found while conducting purposive surveys on 3,600 acres in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)
4. Is the recent collection from Arcata BLM actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid survey on CVS/FIA plots (Broad Scale).
3. Obtain specimen from collection made on Headwaters and have identified by another taxa expert.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys

would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Verification of Headwaters specimen will provide new information.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
 3. Verification of Headwaters specimen is a high priority.
-

***Rhizopogon abietis* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from six historical sites with no location information within the Northwest Forest Plan, including: Oregon (Willamette National Forest), and California (Deadfall Meadows, west of Gazelle). There are currently only 2 records for this species in ISMS. Although limited information is available about this species habitat, it is thought to be associated with the roots of assorted Pinaceae, including *Abies*, *Tsuga*, *Picea*, and *Pinus* spp. This species form hypogeous to emergent fruiting bodies July through December (Castellano et al, 2003).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

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3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Rhizopogon atroviolaceus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four collections (Crater Lake National Park, Willamette National Forest – Indigo Lake trail, Deschutes National Forest –

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Green Lakes, and Mt Hood National Forest – near Timothy Lake) within the Northwest Forest Plan area. This species has been found in association with the roots of various Pinaceae, including *Abies*, *Pinus*, *Pseudotsuga* and *Tsuga* forming hypogeous fruiting bodies May through December.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from one CVS plot on the Deschutes National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and

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association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Rhizopogon brunneiniger* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to California and Oregon. Within the area of the Northwest Forest Plan, it is known from four historical sites in Oregon (Mount Hood National Forest, Barlow Forest Camp; along Alsea Highway 10.8 km west of Philomath; Umpqua National Forest, Limpy Rock RNA, and 3.3 miles west of Basket Butte) and two sites in California (Klamath National Forest, Deadfall Meadows; Tomales Bay State Park within the Pt Reyes National Seashore). This species was last collected in 1988. Found in association with roots of assorted Pinaceae including *Abies concolor*, *Pinus contorta*, *P. monticola*, *P. muricata*, *Pseudotsuga menziesii*, *Tsuga heterophylla*, and *T. mertensiana* from sea level to 2,350 m elevation (Castellano et al. 1999). This species has been collected from September to October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Rhizopogon chamaleontinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan, this species is known from one site on the Siskiyou National Forest (at saddle near Chinaman Hat). Also known from Idaho. Found in association with the roots of *Pseudotsuga menziesii* and scattered *Pinus lambertiana* at 1,100 m elevation (Castellano et al. 1999). Fruiting bodies have been collected from June to September.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. A specimen collected from a FIA plot on the Klamath National has been tentatively identified as this species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Rhizopogon ellipsosporus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to Oregon. Within the Northwest Forest Plan area, it is known from two sites in Josephine and Jackson Counties (Medford BLM, above Cantrell-Buckley Park; Siskiyou National Forest on spur off road 2800). Found in association with the roots of *Pseudotsuga menziesii* and scattered *Pinus lambertiana* at 850 m elevation (Castellano et al. 1999). Fruiting bodies of this species have been collected in October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
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***Rhizopogon evadens v. subalpinus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from 18 sites in California, Oregon and Washington. The majority of these locations are historic sites (Deschutes, Mt Hood, Gifford Pinchot, Willamette, Mt Baker-Snoqualmie National Forests) but collections have been recently made on the Winema National Forest (Windigo Pass and south of Lake of the Woods) and Lakeview BLM (near Surveyor Mtn and Mule Hill). Also known from Idaho. Usually found in association with the roots of *Tsuga mertensiana* or *Abies* spp. from 1,250 to 2,350 m elevation (Castellano et al. 1999). This species fruits from August through October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Rhizopogon exiguus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Washington and Oregon but one specimen was recently collected in California that has been tentatively identified as this species. Within the Northwest Forest Plan area, it is known from five historical sites in Oregon (Siuslaw National Forest – Mary’s Peak, near Mapleton Oregon, and Siskiyou National Forest – Waters Creek) and Washington (Mt Baker-Snoqualmie National Forest – Silver Springs Campground and east of Naches

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Pass). Last recorded observance was in 1992. Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 950 m elevation (Castellano et al. 1999). Fruiting bodies have been collected in March, August, September and November.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. A specimen collected from a FIA plot on the Six Rivers National Forest has been tentatively identified as this species.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and

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association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Rhizopogon flavofibrillosus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from four historic sites in Oregon (Siskiyou National Forest, LTEP study, Pistol River, control plot; LTEP study, Fairview Block, LSLW plot; on Illinois Valley Road across from 011; Deschutes National Forest, Cultus Lake) and two historic sites in NW California (Six Rivers National Forest, junction of road 15 and 13N27; Klamath National Forest, Deadfall Meadows). An additional collection was made on Roseburg BLM by Trappe near Nickel Mountain in 1997 and one collection from the Umpqua National Forest on the random grid survey. It is also known from Idaho and Montana. Found in association with the roots of various Pinaceae, including *Abies concolor*, *A. lasiocarpa*, *Picea engelmannii*, *Pinus attenuata*, *P. contorta*, *P. lambertiana*, *P. muricata*, or *Pseudotsuga menziesii* from 950m to 2,350 m elevation (Castellano et al. 1999). This species fruits from July through November.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from one CVS plot on the Umpqua National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Rhizopogon inquinatus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from two sites on the Willamette National Forest (Longbow Campground; Tombstone Pass). Last recorded observance was in 1980. It is also known from Idaho. Found in association with the roots of *Pinus jeffreyi*, *Pseudotsuga menziesii* and *Tsuga heterophylla* from 500 to 1,400 m elevation (Castellano et al. 1999). Fruiting bodies have been collected in September and October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Rhizopogon truncatus* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known historically within the Northwest Forest Plan area from sites in the Sierra Siskiyou and Cascade mountains of northern California, and the central Oregon Cascade mountains, including: Oregon (Siskiyou National Forest, Mt. Hood National Forest, Rogue River National Forest, Willamette National Forest, Umpqua National Forest, Roseburg BLM, Medford BLM); and California (Lassen National Forest, Klamath National Forest). Collections of this species have been recently made on the Willamette National Forest (Indigo Lakes Trail), Roseburg BLM (Cavitt Creek, Tater Hill RNA), Medford BLM (Offenbacher Point), Mt Hood National Forest (Timothy Lake), Siskiyou National Forest (Limp Creek, Limp Waters Road, Elko Camp). It has been recently collected on CVS/FIA plots in Oregon and California. This species is associated with the Pinaceae and fruits as hypogeous false truffles April through November.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Collections of this species have been made on nine CVS/FIA plots on the Siskiyou (6 plots), Six Rivers (1 tentative identification), Shasta-Trinity (1 tentative identification), and Deschutes (1 plot) National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots.
2. Collect habitat data by conducting known site surveys at CVS/FIA plots where it was collected.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

2. Collection of habitat data at recent collections on CVS/FIA plots is a high priority.
3. Revisiting the historic locations is a lower priority due to the recent collection of this species on the random grid survey.

***Rhodocybe speciosa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species was previously thought to be endemic to Washington but one new collection has recently been made on the Willamette National Forest Dewell Garden). Within the Northwest Forest Plan area, this species is known from three historical sites on the Mt. Baker-Snoqualmie National Forest (Denny Creek campground near Snoqualmie Pass and Barlow Pass) and Mt. Rainier National Park (Tahoma Creek). It occurs on rotten conifer wood at high elevations (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from one CVS plot on the Willamette National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

Rickenella swartzii (Rickenella setipes) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from seven historical sites (Crescent City CA, near Seattle WA, Mount Rainier National Park, and Barlow Pass) within the Northwest Forest Plan. Three collections have been recently made on Arcata BLM in the Headwaters Forest Reserve. Very little is known about this species habitat, other than is if often found in small troops on or among mosses under hardwoods. This species fruits in late summer and autumn.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

4. Are the recent collections from Headwaters Forest Reserve this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.
3. Acquire specimens from Headwaters Forest Reserve and have them verified.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Verification of Headwaters specimens will determine if these are new locations.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
 3. Verification of Headwaters specimens is a high priority.
-

***Russula mustelina* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four historical sites in California with vague location information within the Northwest Forest Plan. Last recorded site was in 1989 on the Shasta-Trinity National Forest. This species is thought to occur at mid- to high-elevation coniferous forests, and can be distinguished from other more common *Russula* species by its compact, hard stem. Additional locations are known from the Sierra Nevada. This species fruits in early autumn.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Sarcodon fuscoindicum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 25 sites within the Northwest Forest Plan area occurring in Washington, Oregon and California. Collections have been made on the Okanogan, Wenatchee, Mt Baker-Snoqualmie, Gifford Pinchot, and Olympic National Forests in Washington, Willamette, Mt Hood, Siuslaw National Forests in Oregon, and the Six Rivers, Modoc National Forests and Arcata BLM in California. The majority of these locations are historic locations with vague collection information. Locations have been found near the coast to mid-elevations in the Cascade Mountains. Little is known about specific habitat requirements for this species. Fruiting bodies form in autumn and winter.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.
3. If these locations can be relocated, then habitat data can be collected by conducting known site surveys.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If locations cannot be relocated then efforts to relocate these sites should occur. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Sedecula pulvinata* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan this species is known from one historical site in Siskiyou Co., CA (Mount Shasta). Known from other sites in California outside of the NFP as well as Colorado and Idaho. Found in association with the roots of *Abies concolor*, *A. lasiocarpa*, *A. magnifica*, *Picea engelmannii*, and *Pinus*

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contorta above 2,000 m elevation (Castellano et al. 1999). Fruiting bodies have been collected from June through September.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
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Sowerbyella rhenana (Aleuria rhenana) (B)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is now known from over 20 scattered locations Oregon, California, Washington. Recent collections have been made on the Willamette, Mt Hood, Six Rivers, and Shasta-Trinity National Forests, Medford, Roseburg, and Salem BLM District. Also known from Europe and Japan. Fruits in duff of moist, relatively undisturbed, older conifer forests (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites and recent collections to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.
3. If recent collections can be relocated known site surveys should be conducted to collect habitat data.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

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Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
3. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations and/or recent collections that cannot be relocated is a high priority. If recent collections can be relocated then attempting to locate these is a low priority.
3. Conducting known site surveys to collect habitat data at recent collections is a high priority.

***Sparrasis crispa* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently known from over 70 sites within the Northwest Forest Plan area, including: Washington (Olympic National Park, Olympic National Forest, Mt. Rainier National Park, Mt. Baker-Snoqualmie National Forest), Oregon (Salem BLM, Mt. Hood National Forest, Umpqua National Forest, Medford BLM) and California (Golden Gate National Recreation Area, Rogue River National Forest, and numerous state lands). This species is highly valued for its edibility and is harvested for personnel and commercial use. This species is saprophytic, occurring on down logs and stumps of trees, fruiting in autumn.

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and known site surveys. This species has been collected from one

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CVS plot on Coos Bay BLM. Also, three locations of this species were found while conducting purposive surveys for other fungal species. One known site survey was completed at a location on Coos Bay BLM.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species still meet the criteria for Survey and Manage (Does the reserve network provide for the species? Is this species associated with LSOG habitats?).
2. Determine association with late-successional/old-growth forests and if reserve network provides for species persistence.
3. Determine high-priority sites for management.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid surveys (Broad scale)
2. Collect habitat data by conducting known site surveys at those locations where the species can be relocated.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Collecting habitat data by conducting known site surveys is a high priority.

***Spathularia flavida* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 39 sites within the Northwest Forest Plan area occurring on several national forests and BLM districts, including: Washington (Olympic National Park, Mt. Baker-Snoqualmie National Forest, Wenatchee National Forest, San Juan Island National Historical Park); Oregon (Siuslaw National Forest, Umpqua National Forest, Siskiyou National Forest, Medford BLM, Winema National Forest, Mt. Hood National Forest). It has also been collected on the random grid survey. Little is known about this species habitat other than that is a saprophytic species fruiting in the summer and autumn.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been collected from nine CVS/FIA plots on the Gifford Pinchot (4 plots), Six Rivers (1 plots), Mt Hood (1 plot), Shasta-Trinity (1 plot), Willamette (1 plot), and Siskiyou (1 plot) National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys on CVS/FIA plots.
2. Collect habitat data through known site surveys at recent collections from the random grid survey.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. If enough sites can be relocated more habitat information needs to be collected to determine species association with late-successional/old-growth habitats and if the reserves can provide for species persistence. Additional habitat information may also be used to develop potential habitat maps. Locations found on the random grid survey can also be used to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.
2. Collecting habitat data by conducting known site surveys will provide information about specific habitat attributes and help answer this species association with late-successional/old-growth.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Conducting known site surveys at recent collections from random grid is a high priority.

3. Revisiting historic locations is a lower priority because of the recent collections.
-

***Stagnicola perplexa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from eight historical sites (Rogue River National Forest – Muir Camp, Mt Hood National Forest – Welches, Mount Rainier National Park, Gifford Pinchot National Forest – Tatoosh Range, Mt Baker-Snoqualmie National Forest – Cascade River, and Wenatchee National Forest – Nason Creek) within the Northwest Forest Plan area. Habitat of this species is rotten wood, occasionally buried deeply enough to appear “rooting” in wet or recently dried-up depressions in coniferous forests. This species forms fruiting bodies in the autumn.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of

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the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

***Thaxterogaster pavelekii* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is thought to be endemic to coastal forests in the Pacific Northwest. Within the Northwest Forest Plan area, it is known from one site in Washington (Copalis Beach), seven sites in Oregon (Cape Perpetua, near Yachats, near Agate Beach, Cape Lookout, Otter Rock) and one site in California with vague location information. It is found in association with the roots of *Picea sitchensis* and *Pinus contorta* below 270 m elevation (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Tremiscus helvelloides* (syn. *Phlogiotis helvelloides*) (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest plan area this species is known from 73 sites over a wide range, and is thought to have a wide distribution in the Northern Hemisphere. This species is saprophytic in coniferous forests, appearing in duff, soil and rotten wood under conifers, fruiting in late summer and autumn (rarely spring).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys on the Mt Hood National Forest. This species has been collected from three CVS/FIA plots on the Mendocino, Six Rivers and Umpqua National Forests. One location was found while conducting purposive surveys on 527 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
2. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known site(s) to determine if species is still present. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year. When sites are located they will be monumented and have more precise location information recorded. If species is re-located some ecological data should be collected to characterize habitat and further refine future survey efforts (Fine scale).
2. Complete random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of known sites will determine if still extant. If species is re-located more precise location information will be available to re-locate sites in the future and potentially focus future survey efforts.
2. Locations of this species detected on the CVS/FIA random grid survey could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.

***Tricholoma venenatum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area this species is known from one site in the Olympic National Park (Olympic Hot Springs trail). Also known from California

and Michigan, but not from Oregon. Found associated with roots of Pinaceae (Castellano et al. 1999). Fruiting bodies have been observed in November.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known site is still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic site to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic site will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic location is a high priority.
-

***Tricholomopsis fulvescens* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area this species is known from one site on the Klamath National Forest (Marble Mountain Wilderness, Stanishaw trail) and two sites in Mt. Rainier National Park (lower Tahoma Creek, Green Lake). One site with vague locality information has been reported from the Mt. Hood National Forest. Found solitary on decayed conifer wood above 1,000 m elevation (Castellano et al. 1999). This species fruits in September and October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Appendix 2 – Fungi

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
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***Tuber asa* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan this species is known from two sites in Oregon (Siuslaw National Forest; Woods Creek Road at watershed gate; Cascade Experimental Forest, at summit along old Highway 101). This species was last collected in 1970. Also known from France and Nebraska. Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 170 to 500 m elevation in Oregon (Castellano et al. 1999). Fruiting bodies have been collected in July and October.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.

Appendix 2 – Fungi

3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
2. Revisiting the historic locations is a high priority.

***Tuber pacificum* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is currently endemic to Oregon. Within the NFP area, it is known from one site on the Siuslaw National Forest (Cummins Creek Wilderness Area,

Appendix 2 – Fungi

Cummins Creek Trail) and one site on the Van Duzer Corridor). Last recorded observance was in 1992. Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 235 m elevation (Castellano et al. 1999). Fruiting bodies have been collected in February, June, and July.

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with

late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
-

Tylopilus porphyrosporus (Tylopilus pseudoscaber) (D)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to the Pacific Northwest. It is known from 28 sites within the NFP area. Sites are scattered in California, Oregon, and Washington. Fruiting bodies have been collected from August through December on soil, duff, or well-decomposed logs in association with the roots of *Picea sitchensis* and *Pseudotsuga menziesii* in coastal to mid-elevation forests (Castellano et al. 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant? (Fine-scale)
2. Determine species range and more specific habitat information within the range of the Northwest Forest Plan.
3. Determine if this species meets the criteria for Survey and Manage? (Does reserve network provide for species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit vicinity of historic sites to attempt to relocate the species. These surveys may need to occur over multiple years due to the fact that this species may not fruit every year.
2. Complete random grid surveys on CVS/FIA plots.

LONG-TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance of persistence. Efforts to re-locate the known locations should occur within the next couple of years.

Appendix 2 – Fungi

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from previous survey efforts. If the historic site of the species is re-located and/or new sites discovered then additional surveys would most likely be needed. If the species is not located through these survey efforts then managers may need to evaluate if additional strategic surveys are needed or be considered completed as meeting one of the four conditions described on ROD page S&G-30.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisit of historic sites will be an attempt to collect a specimen and relocate these sites.
2. If the species is located on the CVS/FIA random grid survey this could provide information about the species range, estimated abundance, and association with late-successional/old-growth habitat. It can also provide new locations where habitat data can be collected.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random survey, specimen identification and data analysis is a high priority.
 2. Revisiting the historic locations is a high priority.
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APPENDIX 3 - LICHENS

***Bryoria pseudocapillaris* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Bryoria pseudocapillaris is known from 23 confirmed populations from California to Oregon, all of which are confined to an area within 2 miles of the coast. About 10 of the sites are tightly clustered on the Samoa Peninsula near Arcata, California. Only 9 sites are known to occur on Federal lands. Most of the known sites have fewer than 4 individuals.

Bryoria pseudocapillaris has a very narrow ecological amplitude and is rare throughout its range. It occurs in coastal sites with moderated temperature and high humidity provided by frequent fog, where it grows on exposed or moderately exposed coastal trees, shrubs, and (once) on rock, in old scrub forests of windswept dunes or rocky headlands, at or near sea level (< 50 m (165 ft) elevation). Preliminary results from the coastal lichen survey indicated that this species is probably associated with late-successional/old-growth habitats along the immediate coast (Glavich et. al 2002). *Bryoria pseudocapillaris* is found predominantly on shore pine and Sitka spruce. It shares the same habitat with a closely related California-Oregon endemic, *Bryoria spiralifera*.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. This survey resulted in new locations at Little River State Park (CA), Dry Lagoon State Park (CA), Crescent Beach Overlook (Redwood National Park), Lake Earl Dunes State Park (CA), New River ACEC (Coos Bay BLM), Deception Pass State Park (WA), Mercer Lake (OR), and Saddle Mountain (OR). This study determined that this species is associated with late-successional/old-growth habitats along the immediate coast.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis from Glavich et al. coastal lichen survey.

2. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Completing analysis of coastal lichen survey will provide information about this species association with late-successional/old-growth habitats, extent of the species range and estimated abundance.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis on CVS/FIA plots is a high priority.
 2. Completing analysis of coastal lichen survey is a high priority.
 3. Due to costs determination of association of late-successional/old-growth habitats is not a priority.
-

***Bryoria spiralifera* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Bryoria spiralifera is endemic to coastal California and Oregon (Brodo & Hawksworth 1977). There are currently 61 known sites of *Bryoria spiralifera*, 52 from ISMS and 10 new sites from the Coastal Lichen Study (Geiser et al, 2000). All of these sites represent about 9 populations, with the bulk of the sites coming from the Samoa Peninsula/Patrick's Point area of Northern California. This species is on the preliminary list of rare California lichens (Magney 1999). Three non-coastal sites in ISMS are misidentified and need to be removed.

Bryoria spiralifera has a very narrow ecological amplitude and is rare throughout its range. This species occurs in coastal sites with moderated temperature and high humidity provided by frequent fog. It grows on exposed or moderately exposed coastal trees, snags and shrubs, in forests or woodlands of windswept dunes and headlands at or near sea level (< 50 m (165 ft) elevation) and within 3 km (1-2 miles) of the ocean. *Bryoria spiralifera* is found predominantly on shore pine and Sitka spruce, but is also occurs on grand fir, evergreen huckleberry, chaparral broom and occasionally on red alder and willow species (Glavich, pers. comm.).

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of

known sites. This survey also collected habitat and association with late-successional/old-growth habitats. Only one new location at Lake Earl Dunes State Park (CA) was found during this survey. Not enough sites were found to make a determination of late-successional/old-growth association for this species.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species? The coastal lichen survey states that to determine association with late-successional/old-growth habitat would require a large expenditure of resources.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete data analysis from Glavich et. al. coastal lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data may indicate that no additional surveys are required for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.
2. Completion of coastal lichen analysis is high priority.
3. Due to costs determination of association of late-successional/old-growth habitats is not a priority.

***Bryoria subcana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Bryoria subcana is considered to be rare within its known range and habitat, as evidenced by the lack of detections in numerous surveys. Although there are 22 known sites for *Bryoria subcana*, 19 from ISMS and 3 new records from the coastal lichen study (Geiser et al. 2000), the ISMS records from the West

Appendix 3 – Lichens

Cascades are probably in error, and need to be verified. Actual known sites are probably lower, especially considering how few times it has been located during recent intensive surveys. For example, out of a total of 163 plots sampled in the coastal lichen study, zero sites were found out of 63 random plots, and only three new sites were found out about 100 intuitive plots (Geiser et al. 2000). Out of 100 Coast Range Strategic Survey CVS plots there were no detections, and it was not found on any of the 125 Cascade plots, where it is not expected to occur.

Bryoria subcana is a hyper-maritime species, and grows on the bark and wood of conifers in Sitka spruce, western hemlock, wet Douglas-fir, wet noble fir, and mixed hardwood-coniferous forests of coastal bays, streams, dune forests, and high precipitation ridges and summits within 50 km (30 mi) of the ocean. Little information is available about species abundance, and no large populations have been identified. High humidity, either as coastal fog or high precipitation, appears to be an important habitat requirement. At the sites where stand age was noted, the host plant is old or the stand age is late-seral to old-growth. Requirements for light are not well understood. The lichen tolerates shade at two sites but percent canopy cover is low at other sites.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitat data. No new sites were found on randomly selected plots, although three locations (previously known site at Saddle Mountain and two new sites in Washington – Moran State Park and Mount Walker) were found by subjectively searching suitable habitat.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. More surveys are needed to determine habitat requirements and range within the Northwest Forest Plan area.
2. Determine if this species meets the criteria for Survey and Manage.
3. Are the locations in the Cascades actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete data analysis from Glavich et. al. coastal lichen survey.

3. Determine if sites in Cascades are actually this species by either surveying the reported locations or conducting research into origin of these reports.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Strategic surveys for this species may be considered completed with the completion of data analysis from the CVS/FIA random grid and coastal lichen surveys. These surveys will have completed the objectives of strategic surveys for this species and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives (Condition 2, ROD page S&G - 30).

If the locations in the Cascades are actually this species additional surveys would need to be conducted since this would change the current thoughts about this species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Completion of coastal lichen survey will determine what future surveys, if any, are necessary.
3. Verify if reported locations in the Cascades are actually this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.
2. Completion of coastal lichen analysis is high priority.
3. Verification of locations from the Cascades is the highest priority for this species.

***Buellia oidalea* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Buellia oidalea is found from sea level to 200 m (700 ft) along the Pacific Coast, usually within 3 km (2 mi) of the ocean. It is confined to low elevation, coastal sites, especially south of the San Francisco Bay. Although the specific habitat preferences of *B. oidalea* have not yet been identified, this and other rare lichen species of coastal Oregon are not randomly distributed. Certain areas, topographic positions, and landforms have unusual concentrations of the rare species. Some lichens are most common on the major headlands and capes, but others are found among dune vegetation. Two kinds of dune vegetation seem to hold the most species: old, open conifer stands with a broken ericaceous understory; and wetlands with large old shrubs (McCune *et al.* 1997).

Buellia oidalea is corticolous and lignicolous on a wide variety of coniferous and deciduous trees and shrubs (Imshaug 1951). In the area of the Northwest Forest Plan, it has been collected from red alder, Monterey cypress, Sitka spruce, shore pine, Douglas-fir, willow, on redwood posts, and shrubs. Its occurrence on young shore pine on the deflation plain coastward from Carter Lake (Douglas County) suggests that it is more common north of California than the few records would indicate (McCune *et al.* 1997). No information on species abundance is available.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. There were no detections of this species from this survey.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast there have been no detections made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. The coastal lichen study interim report (Geiser *et al.* 2000) indicates that additional fieldwork to determine species abundance and habitat requirements is needed.
2. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete data analysis from Glavich *et. al.* 2002 coastal lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data may indicate that no additional surveys are required for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.

2. Completion of coastal lichen analysis is high priority.

PIN LICHENS (*Calicium abietinum* (B), *Calicium adpersum* (E), *Chaenotheca chrysocephala* (B), *Chaenotheca ferruginea* (B), *Chaenotheca furfuracea* (F), *Chaenotheca subroscida* (E), *Chaenothecopsis pusilla* (E), *Microcalicium arenarium* (B), *Stenocybe clavata* (E))

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Calicium abietinum - *Calicium abietinum*, an uncommon pin lichen, has a wide distribution in the Northwest Forest Plan area, where it is more frequent in the Klamath/Siskiyou Region of Oregon and northern California, and in the high Cascades of Washington, Oregon and northern California (Peterson pers. comm.). It may occur throughout the range of the Northwest Forest Plan where its habitat conditions are present (Peterson pers. comm.). Globally, *Calicium abietinum* occurs in the temperate and boreal Northern and Southern Hemispheres (Tibell 1999). It is Red-listed in Sweden (Tibell 1999). Since 1993, the number of known sites for this species in the Northwest Forest Plan area has increased from 1 to 9 since 1993; only six sites are known from federal lands.

Calicium abietinum tends to grow on large, old, decorticate conifer snags with a hard, gray, weathered-looking woody surface. It occurs in open, gappy, well-lit sites. These include open conifer stands, oak balds with occasional remnant conifer snags, conifer snags around rocky outcrops, and the edges of beaver ponds and bogs. In the southern part of its range, old untreated cedar fence posts infrequently function as substitute snags for *Calicium abietinum* (Peterson pers. Comm.). Precipitation regime seems to be an important environmental gradient, with the frequency of *Calicium abietinum* decreasing at wetter sites (Peterson pers. comm.). Little information is available regarding its distribution, ecology or abundance, although this species is still considered to be closely associated with LSOG. (FSEIS 2000; Peterson pers. comm.)

Calicium adpersum - Little is known about this pin lichen regarding its range, distribution, abundance and habitat associations. *Calicium adpersum* appears to be truly rare in our area, where it evidently approaches the southern extent of its North American range (Peterson, pers. comm.). It is known from two sites on Vancouver Island, BC (Nobel 1982; Tibell 1975). The only three sites in our area are from the western Cascades and the Oregon Coast range, with a new collection from California (Peterson & Rikkinen 1999). Globally, *Calicium adpersum* is found in the temperate and boreal northern and southern hemispheres, is sparsely distributed through its entire range, and is Red-listed in Denmark and Finland (Tibell 1999).

The habitat for *Calicium adpersum* in the range of the Northwest Forest Plan is poorly understood because it has been rarely collected. It is known to be a bark-dwelling pin lichen which grows on old conifers with highly textured bark. (Peterson pers. comm.) The few times it has been encountered in our area, it was in cool microsites (Peterson pers. comm.). The sites where Peterson collected it were a 300m elevation north-facing draw, and an open, park-like ridge-top stand at about 1000m (Peterson pers. comm.).

Due to doubts about the historical records for species locations, it is somewhat uncertain that this species occurs in the Northwest Forest Plan area and it is undetermined whether the species is LSOG-related. Surveys are required to determine if the basic criteria for S&M are met.

Chaenotheca chyrocephala - *Chaenotheca chrysocephala* is a pin lichen with a broad global distribution, and is found on several continents. It is more common and widespread than was known during the FEMAT analysis. It occurs throughout our area, on both sides of the Cascades. It has broad ecological amplitude and is known to occur in humid conifer stands, and has been found on conifer bark. The known sites have increased from 1 to 22. It is uncertain if this species is closely associated with LSOG.

The precipitation regime seems to be an important environmental gradient: *Chaenotheca chrysocephala* seems to prefer the middle of the gradient: it is found with reduced frequency in extremely dry or wet sites (Peterson pers. comm.). It tends to be found at mid- to low-elevation sites (Peterson 2000).

Current information suggests that this species has a widespread geographic range within the Northwest Forest Plan, has a limited distribution throughout this range, and occurs in isolated sites.

Chaenotheca ferruginea - In our area, *Chaenotheca ferruginea* occurs mainly in dryer, lower elevation sites, such as major valleys and foothills, throughout the range of the Northwest Forest Plan, and probably avoids the coast and the high Cascades; it is uncommon (Peterson pers. comm.). Globally, it is a very widespread species in temperate to cool temperate areas of both hemispheres (Tibell 1994). *Chaenotheca ferruginea* is found at open, gappy, well-lit sites. These include open conifer stands, oak balds with occasional remnant conifer trees, conifer trees around rocky outcrops, and the edges of beaver ponds and bogs. It also occasionally occurs on the boles of large, old oaks (Peterson 2000).

This pin lichen is known from 13 sites; 9 are recent sites on federally managed land. It occurs mostly at lower elevations, on the bark of conifers and deciduous trees. It is uncertain if this species is closely associated with LSOG. Current information suggests that *Chaenotheca ferruginea* is widespread through the Northwest Forest Plan area, but it has limited distribution throughout the range and occurs in isolated sites.

Chaenotheca furfuracea - *Chaenotheca furfuracea* a pin lichen, probably occurs uncommonly throughout our area where adequately protected and stable microsites exist (Peterson pers. comm.) It is widespread in distribution, but appears to be restricted to specific microsite conditions that can occur in a wide variety of habitats and stand ages (Peterson pers. comm.) Current information suggests that *Chaenotheca furfuracea* has a widespread geographic range with the Northwest Forest Plan area, has a limited distribution within this range, and occurs in isolated site clusters. This species may be more common than previously thought.

There are two general habitats for this species: large corticate conifers on slopes and protected sites among the roots of tipped-up trees. This species appears to be so microsite specific that the stand level characteristics can vary tremendously, however adequately protected and stable microsites rarely occur outside of old forests (Peterson pers. comm.).

Since 1993, the number of known sites has increased from three to 43 with a majority of these occurring on federal ownership. Most of the recent sites for these species occur in reserve land allocations.

Chaenotheca subroscida - This pin lichen is poorly understood, and there is limited information available regarding its distribution, abundance and habitat needs. Because of the difficulty of accurate identification, it is not known if this species occurs in the Northwest Forest Plan area, and it is not known if this species is closely associated with LSOG. Since 1993, very little information has been acquired for this species.

Chaenothecopsis pusilla - This pin lichen is poorly understood, and there is limited information available regarding its distribution, abundance and habitat needs. Because of the difficulty of accurate identification, it is not known if this species occurs in the Northwest Forest Plan area, and it is not known if this species is closely associated with LSOG. Since 1993, very little information has been acquired for this species.

Microcalicium arenarium - This species is only documented from one site in the Northwest Forest Plan area, where it was found on the face of a rock wall in the Columbia Gorge. Two additional sites have been reported but are not vouchered or confirmed. With only one site, the information for this species is very limited, and there is uncertainty if it is closely associated with late-successional or old-growth forests. (Peterson pers. comm.). This is an extremely small species that is difficult to locate and identify (Peterson pers. comm.).

Stenocybe clavata - This pin lichen is endemic to the Pacific Northwest. There is limited habitat data available for this species, and it is uncertain if *Stenocybe clavata* is closely associated with LSOG. .

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort currently occurring for the 11 pin lichen species is the random grid survey on CVS/FIA plots. Partial results are provided in Table 1. Locations of these species have also been found incidentally while conducting purposive surveys for other Survey and Manage species.

Species Name	Number of Plots with Detections
<i>Calicium abietinum</i>	0
<i>Calicium adpersum</i>	0
<i>Chaenotheca chrysocephala</i>	9
<i>Chaenotheca ferruginea</i>	0
<i>Chaenotheca furfuracea</i>	18
<i>Chaenotheca subroscida</i>	1
<i>Chaenothecopsis pusilla</i>	1
<i>Microcalicium arenarium</i>	0
<i>Stenocybe clavata</i>	3

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if these species meet the criteria for Survey and Manage. Are the species associated with late-successional forests? Does the reserve network provide for these species?
2. What are these species ranges and distribution within the Northwest Forest Plan area.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete specimen identification and data analysis of pin lichens collected from random grid surveys on CVS/FIA plots.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Strategic surveys for these species will be considered completed with the completion of the CVS/FIA random grid survey. These surveys will have completed the objectives of strategic surveys for this species and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives (Condition 2, ROD page S&G - 30).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of these species found in the CVS/FIA random grid survey will provide additional information about these species ranges, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey, specimen identification and data analysis is a high priority.
-

***Cetrelia cetrarioides* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Cetrelia cetrarioides occurs primarily in riparian forests and hardwood stands, but also in moist forests at low to mid-elevation and in a variety of stand ages. Current information suggests that it has a widespread geographic range within the Northwest Forest Plan area, has a widespread but spotty distribution within this range, and occurs in isolated site clusters. The LSOG association of this species is unknown at this time.

Since 1993, the number of sites for *Cetrelia cetrarioides* has increased from six to 49 sites, with 24 recent federal sites, 10 of which were located since the 2000 annual species review. It was found in two of 225 CVS plots from Strategic Surveys conducted in the summer of 2000 (Strategic Survey interim database).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Although results are partial, a total of two detections of this species have been found on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey may provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.

***Cladonia norvegica* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Little is known about this species, although it is thought to be quite rare in the Northwest Forest Plan area. It is known to occur in western North America from Alaska to Oregon, Great Britain, and Europe. The number of known sites has increased from one to 16 since 1993. This species occurs on rotten wood and tree bases.

Cladonia norvegica requires laboratory examination and chemical tests for conclusive determinations, but it and its look-alikes are relatively easy to discern in the field.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Although results are partial, this species has been detected on 35 plots over a wide distribution.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?
2. What is the species range and distribution within the Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Strategic surveys for these species will be considered completed with the completion of the CVS/FIA random grid survey. These surveys will have completed the objectives of strategic surveys for this species and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives (Condition 2, ROD page S&G - 30).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.
-

***Collema nigrescens* (F in OR and WA except OR Klamath)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Current information suggests that this species is considered to have a widespread geographical range in the Klamath Basin and southern areas within the Northwest Forest Plan area, and a spotty distribution within that overall range, with the potential for limited connectivity among sites and clusters. In the balance of its range in Washington and Oregon outside of the Klamath province, the species is limited and occurs in isolated sites. Since 1993, the number of known sites in the OR Klamath, CA Klamath, and CA coast Physiographic Provinces has increased from two to 474, with 431 recent sites on federally managed land. Many of these sites are in reserve land allocations. There are relatively few documented locations (28 known sites) for *Collema nigrescens* north of the OR Klamath Physiographic Province through Washington; 16 are recent federal sites.

Collema nigrescens occurs primarily on deciduous trees and shrubs, and occasionally on mossy rock, mainly west of the Cascades. It occurs in low elevation hardwood forests, in a fairly wide range of habitat conditions and stand ages, especially in moist or riparian forests.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. Although results are partial, this species has been detected on 17 CVS/FIA plots (only 3 detections within “F” portion of species range).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?
2. What is the species range, distribution and more specific habitat information within the Northwest Forest Plan?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.

***Dendroica intricatulum* (A in Oregon except Coos, Curry, Douglas, Josephine, and Jackson Counties and all of Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This taxon is currently undergoing taxonomic revision (Tonsberg & Goward 2001). The name *Dendroica intricatulum*, which was used in both the 1994 and the 2001 ROD, is based on material from the East Coast, and has been erroneously applied to our material (Tonsberg & Goward 2001). Evidence suggests that each species in the genus *Dendroica* actually represent the blue-green phototype of either a *Lobaria* or a *Sticta*, largish foliose cyanolichens (James and Henssen 1976). The taxonomy of this entity is further complicated by the recent suggestion that there may actually be at least two distinct taxa in the Pacific Northwest, as evidenced by the very different habitats occupied (Stone pers. comm.; Tonsberg & Goward 2001). For the time being, all material in our area is referred to in this document as *Dendroica intricatulum*.

In the range of the northern spotted owl, *Dendroica intricatulum* occurs in two distinct habitat types, one northern and one southern (it was removed from this portion of the species range in the 2002 Annual Species Review). In the northern part of its range, from the Willamette National Forest north, it occurs in mesic to moist forests in the upper Western Hemlock and lower Pacific Silver Fir Zones in the western Cascades, between 10 and 660 m elevation (30-2170 ft). It primarily occurs in mature and old-growth Douglas-fir, western hemlock, and Pacific silver fir forests, where it is epiphytic on the lower twigs of suppressed understory western hemlock and Pacific silver fir; some stands are riparian and some are not. It also occurs in an open-grown stand of subalpine fir on an old lava flow in a cold pocket near Mt. Baker. The lava flow is unusual in that it supports relatively low-elevation subalpine fir stands with an epiphytic lichen flora that appears to be more similar to that of Douglas-fir stands than subalpine fir in its typical, higher elevation sites (Rhoades 1981).

Although there are 547 known sites in ISMS for the entire Northwest Forest Plan area, only 16 sites occur in the moist, northern part of its range. There are usually only a few individuals present at any given site.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species have included the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. Although results are partial, this species has been detected on one FIA plot in California. Two locations were found while conducting purposive surveys on 200 acres. One known site survey has been completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species? This will need to be evaluated for both habitat types.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Conduct Known Site surveys to collect more detailed habitat information for locations in the northern portion of the range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known Site surveys will collect more detailed habitat data at known locations that may answer questions about LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.
2. Known Site surveys are a lower priority in 2003.

***Dermatocarpon luridum* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species grows on rocks, small boulders, and bedrock, submerged or seasonally emergent, adjacent to, or in, clear mountain streams between 105 and 1980 m elevation (1000-6500 ft), where it can be locally abundant. It is present on seepy terraces, and in streams and rivers with red alder, Douglas-fir, western hemlock and riparian vegetation ranging from young stands to old-growth, and in streams in alpine meadows. Its distribution in the range of the Northwest Forest Plan is scattered and the species may be rare. All known sites of *D. luridum* on federal land within the range of the Northwest Forest Plan are in Riparian Reserves (Leshner et al. 2000).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid surveys on CVS/FIA plots and a regional aquatic lichen survey that was initiated in 2002. There have been no detections of this species on the random grid survey. No results have been reported from the aquatic lichen survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?
2. Do riparian reserves provide for the persistence of this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete random aquatic lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Completion of aquatic lichen survey will provide information about this species distribution, estimate its abundance and habitat.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey data analysis on CVS/FIA plots is high priority.
2. Completion of aquatic lichen survey is a high priority.

***Heteroderma sitchensis* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Heteroderma sitchensis is very rare, known from only a few sites in British Columbia (Goward 1990; Goward et al. 1994), and Southeast Alaska (Geiser et al. 1998). It is known from a single site within the Northwest Forest Plan area along the Oregon coast at Cape Lookout (McHenry and Tornberg 2002). In British Columbia it is restricted to the twigs of Sitka spruce in sheltered, humid, foreshore situations along the immediate coast in the Wetter Maritime Coastal Western Hemlock Zone of Klinka et al. (1979). In Southeast Alaska, it is rare on alder in the floodplain of a large glacial river, a few miles from the ocean (Geiser

et al. 1998). This habitat is also very wet, and includes early successional Sitka spruce and cottonwood.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species occur in suitable habitat in the Northwest Forest Plan area?
2. If so, is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete coastal lichen survey and data analysis.
3. Conduct survey of Cape Lookout to re-locate species and collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Completing analysis of coastal lichen survey will provide information about this species association with late-successional/old-growth habitats, extent of the species range and estimated abundance.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
2. Completion of coastal lichen data analysis is a high priority.
3. Survey of Cape Lookout to re-locate species and collect habitat data is a lower priority.

Hypogymnia duplicata (Hypogymnia elongata) (C)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This distinctive species is endemic to the Pacific Northwest and known to occur from Alaska to northwestern Oregon. Since 1993, the number of known sites in the Northwest Forest Plan area has increased from 14 to more than 70, and 56 are recent federal sites. Most of the known sites are in northwestern Washington, but it also occurs on the Mount Hood NF and in Salem BLM land. This species is found in old-growth forests in high precipitation areas, between 1,100 and 5,500

ft elevation, in the western cascades, Olympic Mountains, and Oregon Coast Range. Populations of this species occur sporadically across the landscape, and it is seldom abundant where it occurs. Known sites become limited south of Snoqualmie Pass, possibly because of limited availability of suitable habitat.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, known site surveys, purposive surveys and habitat modeling. Although results are partial this species has been detected on eight CVS plots in Washington and northern Oregon. Nine new locations were discovered while conducting purposive surveys on 940 acres on the Mt Hood and Olympic National Forests. Known site surveys have been completed at nine known sites. Validation surveys have been completed for this species on the Mt Baker-Snoqualmie National Forest and preliminary maps are being developed for the rest of the species range.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Define habitat and range within Northwest Forest Plan. What is the southern extent of this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Continue habitat modeling for rest of species range.
2. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Modeling will identify habitats that may help refine pre-disturbance survey protocols to focus survey efforts only in those area of high- and moderate-likely habitat.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of the habitat model for this species is a high priority.
 2. Completion of data analysis of random grid survey is a high priority.
 3. Additional known site surveys for locations south of the Mt Baker-Snoqualmie National Forest is a high priority.
-

***Hypogymnia vittata* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Hypogymnia vittata has not been documented within the Northwest Forest Plan area, but it does occur in British Columbia and Alaska. Based on its habitat requirements further north, suitable habitat probably exists in the planning area in northern Washington. In British Columbia it is infrequent over conifers and mossy rock in humid coastal and intermontane forests (Goward et al. 1994), and in southeast Alaska it is common on conifers and deciduous shrubs in most forest types (Geiser et al. 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species is the random grid survey on CVS/FIA plots. There have been no detections of this species on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species occur within the Northwest Forest Plan area?
2. If this species does occur in the Northwest Forest Plan area, does it meet the criteria for inclusion on the Survey and Manage list?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Taxa expert will conduct analysis of habitat for this species to determine likelihood of habitat on federal lands within the Northwest Forest Plan area.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. These surveys may determine if this species actually occurs within the Northwest Forest Plan Area.

2003 STRATEGIC SURVEY PRIORITY

1. Analysis to determine if potential habitat for this species occurs within the Northwest Forest Plan is a high priority.
2. Conducting surveys in high-likely potential habitats is a high priority.

***Hypotrachyna revoluta* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Hypotrachyna revoluta is known from only six locations within the Northwest Forest Plan area. Four sites are along the Oregon Coast (Yaquina Bay, Cape Lookout, North Bend, and Siuslaw National Forest - Cascade Head Experimental Forest) and two in Washington (Wallace Falls State Park and near Skykomish

River east of Gold Bar). The species has a broad global distribution, and occurs in western North America from coastal Alaska to California. Information regarding distribution, abundance, and habitat is limited.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. Detections of this species only occurred on 5% (two detections) of the randomly selected survey areas and two additional locations on the subjective surveys. Due to the few detections no association with late-successional/old-growth can be made without a large expenditure of resources.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey. There were not detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. (Does the reserve network provide for this species? Is the species associated with late-successional forests?)
2. Determine status and habitat conditions of known sites.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Complete data analysis from Glavich et al. coastal lichen survey.
3. Assess if additional strategic surveys are needed.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data may indicate that no additional surveys are required for this species because all known potential habitat has been surveyed, and there is little likelihood that additional potential habitat occurs within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid data analysis is a high priority.
 2. Completion of coastal lichen analysis is high priority.
-

***Leptogium burnetiae* var. *hirsutum* (*Leptogium hirsutum*) (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, there is only one verified specimen of this taxon at this time. It is one of three similar species of *Leptogium* and may require expert verification where specimens are atypical (USDA & USDI Species Review Panel 2001). It typically grows on shrubs or trees, but also occurs on decaying logs, and mosses.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species is the random grid surveys on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?
2. Additional voucher material is needed to clear up possible taxonomic questions.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Revisit known sites to collect vouchers (if site can support collection) for possible taxonomic work.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Collection of voucher specimens will provide information on taxonomic questions.
2. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of the random grid survey specimen identification and data analysis is a high priority.

2. Collection of voucher specimens is a high priority to assist with taxonomic questions.

***Leptogium cyanescens* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Northwest Forest Plan area, *Leptogium cyanescens* is known from eleven sites that have all been located since 1993. Although Sierk (1964) considered this species to be one of the most abundant *Leptogium* in North America, that statement is qualified by McCune & Geiser (1997) who note that it is common in eastern North America but rare in the Pacific Northwest. This is a temperate-subtropical, widely distributed suboceanic species (Krog 1968).

In our area *Leptogium cyanescens* is rare on bark, rotten logs, and rocks (McCune & Geiser 1997). This species has been found in the Western Hemlock and Pacific Silver Fir Zones from 1400-4600' elevation in a mixed conifer stand, a mature big leaf maple and Douglas-fir stand, and in four unspecified forested stands (USDA 1998). In British Columbia it is rare over trees at lower elevations in sheltered forests in humid intermontane localities (Goward et al. 1994). In Southeast Alaska it was infrequent to uncommon on alder and willow and rarely occurred on Sitka spruce in the floodplains of the large, glacial mainland rivers (Geiser et al. 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species is the random grid surveys on CVS/FIA plots. This species has been detected from one CVS plot on the Umpqua National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Additional voucher material is needed to clear up possible taxonomic questions.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis on CVS/FIA plots.
2. Revisit known sites to collect vouchers (if site can support collection) for possible taxonomic work.
3. Conduct known site surveys to collect habitat data that may be used for habitat modeling.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Collection of voucher specimens will provide information on taxonomic questions.

Appendix 3 – Lichens

2. If more locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Collecting additional habitat data will help refine survey protocols for pre-disturbance surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of specimen identification and data analysis from random grid survey is a high priority.
 2. Collection of additional voucher specimens is a high priority.
 3. Conducting known site surveys is a lower priority.
-

***Leptogium rivale* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Leptogium rivale, an aquatic lichen, is endemic to western North America, and is known from California, Oregon, Washington, Alaska, Wyoming, Montana, and northern Colorado. In our area, *Leptogium rivale* is usually found in streams between 500 and 6500 ft elevation, although it is known from a coastal freshwater seep. It occurs on rocks, boulders, and bedrock in streams, rivers, or seeps, usually submerged or inundated for most of the year. In larger rivers with higher flows, it grows on the sides and downstream edges of in-stream bedrock, where it apparently receives some protection from the direct force of the water. *Leptogium rivale* can be locally abundant. It is primarily known from the Washington and Oregon Cascades, and in Oregon it extends as far south as Klamath County.

Since 1993, the number of known sites in the Northwest Forest Plan area has increased from two to 55. Over half of the known sites are on federal land and at least 20% are within protected land allocations. This species is potentially under-represented because of a lack of surveys in suitable habitat, and because it can be easily overlooked.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and a regional aquatic lichen survey. There have been no detections of this species from the random grid survey. No results have been reported from the aquatic lichen survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete regional aquatic lichen survey to determine species range, estimate abundance, and habitat requirements.
2. Complete random grid survey specimen identification and data analysis.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Results from the regional aquatic lichen survey will provide information about this species range, distribution, estimate its abundance and its habitat.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.
 2. Completion of the aquatic lichen survey is a high priority.
-

***Leptogium teretiusculum* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from eight sites within the Northwest Forest Plan area, 3 of which have been located since 1993. Information is limited on its distribution, habitat, and abundance in this region. It is reported as having a scattered distribution at northern latitudes. Current information suggests that *L. teretiusculum* has a widespread geographic range within the Northwest Forest Plan area, has a widespread by spotty distribution within this range, and occurs in isolated sites. It is typically found on rock, soil, and the bark of deciduous trees in riparian habitats.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species is the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis.

2. Conduct known site surveys to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Conducting known site surveys will provide more detailed information that can be used to assess if species meets Survey and Manage basic criteria.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.
2. Known site surveys are a lower priority.

***Lobaria linita* (A except WA Cascades south of Snoqualmie Pass and Olympic Peninsula)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species occurs sporadically in northern Europe and Asia, and is found in North America from Alaska to northern Oregon. Since 1993, the number of known sites has increased from 10 to 149, with most of these occurring on federal lands. Some of these records represent the subalpine variety of this species (*Lobaria linita* var. *linita*). The majority of the known sites are in northwestern Washington, with 36 records in reserve land allocations. *Lobaria linita* var. *tenuior* occurs in old-growth forests primarily in the Pacific Silver Fir Zone, where it grows on the lower boles of conifers and on moss-covered rocks in interior forest conditions. It is limited and sporadic in its distribution and is often absent in what appears to be suitable habitat.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the CVS/FIA random grid survey, known site surveys, purposive surveys and habitat modeling. Although results are partial, this species has been detected from 11 CVS plots in Washington. A total of seven new locations were found while conducting purposive surveys on 360 acres. Known site surveys have been conducted in Washington which have been used for developing potential habitat maps. Habitat modeling is completed through the validation stage on the Mt Baker-Snoqualmie National Forest. First level habitat maps are being developed for the rest of the species range using known site survey data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What are this species habitat requirements and range within the Northwest Forest Plan?
2. What is the southern extent of this species range in the Northwest Forest Plan?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete habitat modeling including validation surveys.
2. Complete specimen identification and data analysis of the random grid surveys.
3. Continue to conduct known site surveys for this species south of the Snoqualmie Pass.
4. Purposive surveys by trained personnel may also be effective in locating additional sites.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Modeling will identify habitats that may be used to possibly amend pre-disturbance survey protocols to redirect survey efforts to areas of high- and moderate-likely habitat.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of habitat model is a high priority.
2. Completion of specimen identification and data analysis of random grid survey is a high priority.
3. Conducting known site surveys to collect habitat information is a high priority.
4. Conducting purposive surveys is a lower priority.

***Lobaria oregana* (A in CA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to North America, with a widespread but scattered distribution in Oregon and Washington. Since 1993, the number of known sites in the Northwest Forest Plan in Oregon and Washington has increased from 42 to 544. Nearly 450 of these sites are on federally managed land, and there are many additional sites not reported to the ISMS database. *Lobaria oregana* is widespread on trees (mainly conifers) and shrubs in low to mid-elevation mesic to moist conifer and hardwood forests and riparian areas west of the Cascade crest in Oregon and Washington. Although *Lobaria oregana* can occur in younger stands, especially moist sites where it has blown in from adjacent colonized areas, it reaches its greatest biomass in sites greater than 200 years of age (McCune 1993).

Lobaria oregana becomes more restricted in distribution in California. The ISMS database has only seven reported sites for California; six are recent federal sites. For these reasons, the range for this species has been split into two geographic areas: (1) Washington and Oregon, and (2) California.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no confirmed detections (one unconfirmed detection has been reported from the Six Rivers National Forest.) of this species from this survey (there have been 107 detections of this species in Oregon and Washington where it is no longer a Survey and Manage species). Five additional locations were found in Northern California while conducting purposive surveys on 1,182 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range and abundance within California.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis on FIA plots in California.
2. Conduct purposive surveys in high-likely habitat in northern California.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats in California.
2. Purposive surveys may locate additional sites within this portion of the species range, and will provide additional information on its habitat preferences at the southern limits of its range.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority (including confirmation of the one potential detection).
2. Conducting purposive surveys in California is a high priority.

***Nephroma bellum* (E Oregon Klamath, Willamette Valley, East Cascades; Washington Western Cascades, Eastern Cascades, Olympic Peninsula)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species has a broad global distribution and is well distributed west of the Cascade crest. It is widespread and occurs in various habitats and stand ages, on trees, shrubs, and mossy rocks in moist hardwood and conifer forests, and riparian areas from low to mid-elevation, mainly west of the Cascade crest. Current information indicates that it may be a common species in the Northwest Forest Plan area (FSEIS, 2000). Since 1993 the number of known sites for this species in the Northwest Forest Plan area has increased from nine to 173 with only 13 sites known from the areas where it is still on the Survey and Manage list. Its distribution in California is unknown since this at least one unverified siting from coastal northern California (USDA & USDI Species Review Panel 2001).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species is the random grid survey on CVS/FIA plots. There have been 29 detections of this species from this survey with six of these locations within the “E” portion of the species range.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.

***Nephroma isidiosum* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species has not been documented in the Northwest Forest Plan area. It is known to occur in British Columbia, and it is suspected that suitable habitat exists in the Northwest Forest Plan area (FSEIS, 2000).

STATUS/RESULTS OF STRATEGIC SURVEYS

Appendix 3 – Lichens

The only strategic survey for this species is the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Is the species present in suitable habitat in the Northwest Forest Plan area?
2. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid data analysis to see if species was located within Northwest Forest Plan area.
2. Taxa expert will conduct analysis of habitat for this species to determine likelihood of habitat on federal lands within the Northwest Forest Plan area.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Habitat analysis will provide information on the location of probable habitat, and where surveys should be focused.

2003 STRATEGIC SURVEY PRIORITY

1. Assessing if potential habitat occurs within the Northwest Forest Plan area is a high priority.
2. Completion of random grid specimen identification and data analysis is a high priority.

***Nephroma occultum* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is a western North America endemic occurring from south central Alaska (Derr 1997) to southern Oregon. It is a mid-canopy epiphyte in older, moist conifer forests, from low to mid-elevation on the west slope of the Cascades in Oregon and Washington. Populations are sporadically distributed in this region, and most known sites are in the central Oregon Cascades near they type locality. *Nephroma occultum* occurs on large, old, lateral limbs of conifers, and at sites where it is present it can often be detected on the forest floor as litterfall. While it usually grows in the canopy, it has been found on branches and boles of conifers at eye level. Since 1993, the number of known sites for this species in the Northwest Forest Plan area has increased from 21 to nearly 150, with 42 sites recorded within the last year. Some of these new sites may actually be duplicates,

and about 35 of these new sites are actually within six different project areas. Fifty to 80% of sites are on federal land and approximately 35% are in reserve allocations. Current information suggests that this species shows a strong affiliation with LSOG (USDA & USDI Species Review Panel 2001).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots, known site surveys and purposive surveys. This species has been detected from four CVs plots on the Umpqua and Willamette National Forests. Several known site surveys have been completed throughout this species range over the last few years. One new location was found while conducting purposive surveys on 845 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Define habitat and range within Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Develop first level potential habitat map using existing known site survey data.
2. Continue to conduct known site surveys to collect habitat data that can be used to develop potential habitat maps.
3. Complete specimen identification and data analysis of the random grid surveys.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Developing potential habitat maps would provide initial information on how much potential habitat is present within the Northwest Forest Plan.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Known site surveys will continue to collect habitat information that will be used in developing and refining potential habitat maps for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completing additional known sites surveys is high priority.
2. Development of a first potential habitat map is a high priority.
3. Completion of random grid specimen identification and data analysis is a high priority.

***Niebla cephalota* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Niebla cephalota is a North American coastal endemic that occurs from Baja California to Washington in coastal fog belt areas. It was recently found in southern Southeast Alaska, on a small marine island (K. Dillman, pers. comm, Dec 2001). This represents a substantial northward range extension, since it is not yet known from British Columbia. It is typically found on exposed open-growth Sitka spruce and occurs on other conifers, shrubs, and rock in open sites on forest edges, windswept headlands, sand dunes, and sparsely forested estuaries and willow swales. At the present time, this species is considered to be closely associated with late-successional or old-growth forests. Although the number of known sites for this species in the Northwest Forest Plan area has increased from 9 to 36 since 1993, some of these 36 sites appear to overlap and there are probably only 18 distinct populations.

There is a proposed revision within this genus that would split this species into two species within the range of the Northwest Forest Plan. Lichenologists in western North America have not achieved consensus on this revision. The vouchers from our area have not yet been examined in light of this taxonomic revision. Our collections may represent more than one species. It may be more common in California than Oregon and Washington (USDA & USDI Species Review Panel 2001).

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. This species was detected from several locations throughout this survey's study area in the subjective survey while the random survey only detected locations in California. Association with late-successional/old-growth habitats may be determined with additional surveys by stratifying habitat with a high potential to support this species.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey specimen identification and data analysis from CVS/FIA plots.
2. Complete data analysis from Glavich et al. coastal lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data, and may indicate that no additional surveys are required for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
 2. Completion of coastal lichen analysis is high priority.
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***Pannaria rubiginosa* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Known from 15 sites within the Northwest Forest Plan area, about half of which have been located since 1993. It was not detected in any of the 163 plots sampled in the coastal lichen study (Geiser et al. 2000). This species has a broad global distribution and is found in low elevation moist conifer and deciduous forests and in willow and shrub thickets in coastal dune areas .

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. No locations were found on random portion of this survey. Three new locations (Mt Vision – Pt Reyes National Seashore, Summit Creek – Oregon Dunes Recreation Area, and Blue Bill Beach) were found by subjectively surveying potential habitat. Due to the few detections of this species association with late-successional/old-growth habitats cannot be determined without a large expenditure of resources (Glavich et. al. 2002).

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis on CVS/FIA plots.
2. Complete data analysis of coastal lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Completing data analysis of coastal lichen survey will provide information about this species habitat and rarity within the Northwest Forest Plan.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey specimen identification and data analysis is a high priority.
2. Completion of data analysis of coastal lichen survey is a high priority.

***Pannaria saubinetii* (F) (*Fuscopannaria saubinetii*)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

North American lichens in the family *Pannariaceae* have recently been revised, including material in the genus *Pannaria* (Jorgensen 2000). Material formerly called *P. saubinetii* has been moved to the genus *Fuscopannaria*, which Jorgensen characterizes as “the most complicated genus of the Pannariaceae in North America...the species are especially complex in the Pacific region. More detailed studies are required” (Jorgensen 2000 p. 674).

Older S&M information about “*Pannaria saubinetii*” suggests that this is a common, widespread species with over 100 known sites in ISMS (Strategic Survey interim database). Unfortunately, this information is incorrect because it was compiled before the Jorgensen 2000 paper was published. He finds *Fuscopannaria saubinetii* to be a rare species of which only a few correctly identified specimens have been located (Jorgensen 2000). Most American material given that name has larger spores than *F. saubinetii*, and belong in *F. pacifica*. *F. incisa* is another morphologically similar species, and, again, spore characteristics need to be checked to confirm positive identification.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. This species has been detected on 61 CVS/FIA plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. How many of the known sites are actually *Fuscopannaria saubinetii*?
2. For actual *F. saubinetii* material, determine if this species meets the criteria for Survey and Manage. (Does the reserve network provide for this species? Is the species associated with late-successional forests?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.

***Peltigera pacifica* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Peltigera pacifica occurs in riparian forests and hardwood stands, and in other moist forests at low to mid-elevation. Since 1993, the number of known sites in the Northwest Forest Plan area has increased from six to 92. There are additional undocumented locations.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and known site surveys. This species has been detected on 12 CVS plots in Oregon and Washington.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.

***Platismatia lacunosa* (C except Oregon Coast Range)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species occurs from Alaska to California. Since 1993, the number of known sites in the Northwest Forest Plan area has increased from nine to 96 sites. It has been found on the bark and wood of mainly deciduous trees (especially alder) and occasionally on mossy rock from the coast to the Cascades. It appears to occur in a wide range of habitats, from mid to late-seral conditions in moist riparian forests and cool upland sites. Currently, it is considered to be associated with late-successional or old-growth forests.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. This species has been detected on 20 CVS plots in Oregon and Washington. The majority of these have been in the Oregon Coast Range. Several known site surveys have occurred over the last two years. In addition, seven new locations were discovered while conducting purposive surveys on approximately 1,000 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Is this species associated with late-successional/old-growth habitat?
2. Does the reserve network provide for this species?

3. What are the range of habitats for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Continue to conduct known site surveys species within the West Cascade Province.
2. Complete specimen identification and data analysis of random grid surveys on CVS/FIA plots.
3. Begin broad scale habitat mapping for this species to show potential habitat.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Known site surveys will provide better habitat information and may answer if species is associated with late-successional/old-growth habitats. These will also be used to develop potential habitat maps.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Increased knowledge of habitat may contribute to the development of pre-disturbance survey protocol so that these surveys only occur in likely habitat.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.
2. Conducting known site surveys is a high priority.
3. Developing a first level potential habitat map using existing known site data is a high priority.

***Pseudocyphellaria perpetua* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

A new species, *Pseudocyphellaria perpetua*, has been described from Oregon, and, using molecular markers, was found to be distinct from the morphologically similar *P. crocata* (Miadlikowska et al., 2002). This name applies to material formerly called “*P. sp. 1* and *P. mougeotiana*” in other S&M documents. It differs from *P. crocata* by having a yellow medulla and predominantly marginal soralia. The medulla (apart from the soralia) of *P. crocata* is white, and the soralia are mainly laminal, but also marginal in part (Miadlikowska et al. 2002). Both species have yellow soralia and a cyanobacterial photobiont.

Little is known about the ecology of this species. It is currently only known from less than 10 sites, all oceanic and sub-oceanic areas in North America (coastal Oregon, eastern Canada and eastern US), and far eastern Russia (Miadlikowska et al. 2002). It occurs on both conifers and hardwoods. In our area, it is known

Appendix 3 – Lichens

from coastal Oregon old-growth and mixed-age Sitka spruce forests with Douglas fir and western Hemlock (Miadlikowska et al. 2002).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species has been the random grid survey on CVS/FIA plots. This species has been detected on one CVS plot on the Siuslaw National Forest. Even though this species is known to occur primarily near the coast it was not included in the coastal lichen survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?
2. What is the habitat for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete specimen identification and data analysis of random grid surveys on CVS/FIA plots.
2. Conduct Known Site surveys to collect additional information about species habitat to determine if species meets the criteria for Survey and Manage.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey and revisiting known locations of this species is the first step in collecting additional habitat information about this species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Morphologically similar material will be collected in the field at all CVS and Strategic Survey plots, and identification will be verified by taxa expert to assist in determining range and habitat affiliation(s) of the species.
2. Locations of this species found in the CVS/FIA random grid survey may provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid specimen identification and data analysis is a high priority.
2. Conducting Known Site surveys is a high priority.

***Pseudocyphellaria rainierensis* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species, an endemic to the Pacific Northwest, is known from southeast Alaska to southern Oregon. It is an epiphyte primarily on conifer trees in cool, humid, old-growth to climax forests in the Western Hemlock or lower Pacific Silver Fir zones. The elevational range of the known sites is between 330-4000 ft. When present, *P. rainierensis* is generally not abundant, and occupies only a portion of what appears to be suitable habitat, suggesting strong dispersal limitations and possibly specific habitat preferences (Leshner et al. 2000). Since 1993, the number of known sites in the Northwest Forest Plan area has increased from nine to 165 sites. It is still considered rare with a distribution that is sporadic even in suitable habitat.

STATUS/RESULTS OF STRATEGIC SURVEYS

Several strategic survey efforts are currently ongoing for this species. These include the random grid survey on CVS/FIA plots, known site surveys, purposive surveys, and developing potential habitat maps. There have been five detections, from the Mt Baker-Snoqualmie, Gifford Pinchot, and Willamette National Forests of this species on the random grid survey. Several known site surveys to collect habitat information have been completed the last two years. An additional six locations were found while conducting purposive surveys on 1,170 acres. A potential habitat map has been developed for the Mt Baker-Snoqualmie National Forest. A potential habitat map is currently being developed for the rest of the species range.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Define habitats, abundance, and range within Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete specimen identification and data analysis of random grid survey.
2. Expand Potential Natural Vegetation model to cover entire species range.
3. Continue to conduct known site surveys to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Modeling will identify potential habitat that may be used to possibly amend pre-disturbance survey protocols and redirect survey efforts into those areas of high- and moderate likely-habitat.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Known site surveys will collect habitat data that can be used in developing potential habitat maps for the entire species range.

2003 STRATEGIC SURVEY PRIORITY

1. All strategic survey work for this species is a high priority.
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***Ramalina thrausta* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is reported to occur in boreal North America, south to Oregon, and in western Montana. In the Northwest Forest Plan area, it is reported from Oregon and Washington; the number of known sites has increased from three to 136 sites. *Ramalina thrausta* is typically found on bark and branches of trees, primarily conifers, in low to mid-elevation moist forests and riparian areas. This species occurs on boles and branches throughout the canopy, mostly on conifers but sometimes on hardwood shrubs or ash. Previously thought to be primarily riparian associated, recent surveys are finding it in somewhat drier, although still moist, areas (fire MRs, cite the same for this species, DEIN and USLO). Mostly found at low elevations. This species can be mistaken for the widespread and common lichen, *Alectoria sarmentosa*. To date, many of the locations for this species have been reported from mature or old-growth forests. Many field units are now reporting more locations since this species now requires pre-disturbance surveys.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. This species has been detected from 10 CVS plots in Oregon. Several known site surveys have been conducted for this species. One location was found while conducting purposive surveys.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Is this species associated with late-successional/old-growth habitat and what are the concerns for persistence?
2. What is the habitat amplitude for this species and the range within the Northwest Forest Plan area?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Continue to conduct known site surveys for this species throughout the range and habitats.
2. Complete specimen identification and data analysis of random grid surveys on CVS/FIA plots.
3. Develop a first potential habitat map for this species using existing known site survey data.
4. Conduct purposive surveys in areas of high potential habitat in the central Oregon Cascades and Oregon Coast Range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Known site surveys will provide better habitat information and may indicate whether this species is associated with late-successional/old-growth habitats.
2. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
3. Development of a potential habitat map will provide initial information about how much potential habitat for this species occurs in the Northwest Forest Plan area. As this map is calibrated and validated it will provide information that may refine where pre-disturbance surveys would occur.

2003 STRATEGIC SURVEY PRIORITY

1. All strategic survey work for this species is a high priority.
-

***Teloschistes flavicans* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Teloschistes flavicans is a widespread tropical species that occurs sporadically along the west coast of the Americas from Ecuador to northern Oregon (McCune & Geiser). Eighteen sites are known within the Northwest Forest Plan area, and only two new sites have been located on federal land since 1993. . The only substantial population of this species within the Northwest Forest Plan area is at Cape Lookout State park in northern coastal Oregon. It is not known from the portions of Washington and California within the Northwest Forest Plan area.

In our area *Teloschistes flavicans* is confined to forested headlands and dunes of the coastal fog belt, especially on capes or peninsulas, at sites less than 200 m (600 ft) elevation (McCune et al. 1997). At Cape Lookout it is found on the twigs of Sitka spruce and is common in the litterfall of an old Sitka spruce forest on the long, forested headland of the peninsula. At other sites it occurs on the boles and limbs of exposed Sitka spruce and Hooker's willow in an open Sitka spruce forest, on shore pine in a mature shorepine forest and in litterfall in a small, old, mixed shore pine and Sitka spruce forest.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. This species was not detected on any of the

randomly selected plots. Two locations were found on the subjective surveys (Mt Vision – Pt Reyes National Seashore, CA and Cape Lookout, Oregon).

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys specimen identification and data analysis to determine if this species is detected on this survey.
2. Complete data analysis from Glavich et al. coastal lichen survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data, and may indicate that no additional surveys are required for this species (although preliminary results indicate that not detections were made to make a determination about range and habitat).

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey specimen identification and data analysis is a high priority.
2. Completion of coastal lichen data analysis is high priority.

***Tholurnia dissimilis* (B south of Columbia River only)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from Scandinavia and North America, where it reaches its southern limit in the central Oregon Cascades. In the Pacific Northwest, the typical habitat for *T. dissimilis* is on krummholz or flag-form subalpine fir and Englemann spruce on windswept ridges in the upper montane and subalpine zones up to timberline. The elevational range of known sites is from near sea level at Port Angeles, Washington to 6700 ft (Leshner et al. 2000). Since 1993, the number of known sites in the Northwest Forest Plan area has increased from nine to 21.

Appendix 3 – Lichens

Eighteen of these sites are in Washington and all but one are on federal land. This species is very small and may only be present in treetops or on the ground as litterfall .

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species south of the Columbia River.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?
2. Are habitats where this species occurs affected by agency management actions?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid specimen identification and data analysis on CVS plots.
2. Conduct Known Site surveys to collect habitat data to determine if species meets LSOG Survey and Manage criteria.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Complete the random grid survey specimen identification and data analysis. Conduct known site surveys to collect additional habitat information to determine if species meets LSOG criteria. Also determine if habitats for this species in Oregon are affected by agency management actions. When these are completed then strategic surveys would be considered completed (ROD Criteria #1).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Determine if species meets criteria for Survey and Manage.
2. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats in Oregon.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey specimen identification and data analysis is a high priority.
2. Collecting habitat data through known site surveys is a high priority.

***Usnea hesperina* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species has a broad global distribution and is found in western North America from British Columbia to Oregon within the coastal fog belt. It was known from only 1 site in 1993, and is now known from 24 locations along the coast in the Northwest Forest Plan area (USDA & USDI Species Review Panel 2001). Seven of these locations are on federally managed lands.

Usnea hesperina is an epiphyte on coniferous trees and hardwood shrubs in forested and shrubby habitats of the coastal fog belt. It has not been found inland, despite systematic surveys on the Siuslaw National Forest and other forests of the western Cascades (USDA 1998). No large populations of this lichen have been found, but individual thalli have been observed in an increasing number of places. In our area, all known sites are within 5 km (3 mi) of the Pacific Ocean. Its various forested habitats share the following characteristics: some old trees are present on the site; the trees are in an exposed location (headland, ridge, windswept dune); or the host trees are exposed in the stand (meadow edges, patchworks of shrubs and deciduous trees that shed leaves during the peak growing season of lichens, scrub forests on stabilized dunes and wetlands). It occurs on Sitka spruce, western hemlock, Douglas-fir, Hooker's willow, evergreen huckleberry, Pacific wax-myrtle, and Pacific rhododendron.

STATUS/RESULTS OF STRATEGIC SURVEYS

This species was included as part of a survey of 14 Survey and Manage species known only from the immediate coast (Glavich, Geiser and Mikulin 2002). This survey consisted of surveys at randomly selected areas along the coast of California, Oregon and Washington and purposive surveys in the vicinity of known sites. This survey also collected habitat and association with late-successional/old-growth habitats. This species was located on random plots in Washington and Oregon, but not in California. Association with late-successional/old-growth habitats could not be made due to the low number of detections. This survey also indicates to make this determination it would require a large expenditure of resources.

This species is also included in the random grid survey on CVS/FIA plots, but since very few (if any) of these plots occurred near the coast no detections have been made on this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Is the species associated with late-successional forests? Does the reserve network provide for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey data analysis on CVS plots to determine if species is located inland (Broad scale).
2. Complete data analysis from Geiser et al. coastal lichen survey.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Once the random grid survey on CVS/FIA plots and the coastal lichen survey is completed, data analyzed and final reports are submitted strategic surveys will be completed for this species (ROD Criteria #2).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Coastal lichen results will yield detailed habitat and range data, and may indicate that no additional surveys are required for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Completion of coastal lichen data analysis is high priority.

***Usnea longissima* (A in California, Curry, Josephine and Jackson Counties, Oregon) and (F in Oregon except in Curry, Josephine, and Jackson Counties, Oregon)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Usnea longissima is scattered throughout our area, in the Olympics, Western Cascades and Coast Range of Washington and Oregon (ISMS 2001), and into Mendocino County, California. Because of its rarity in the southern part of its range, it was recently Red-listed in California, where it is rare (Magney 1999). Due to a combination of anthropogenic influences such as habitat alteration and air quality degradation, *U. longissima* has declined significantly throughout its global range (Esseen et al.1981).

In our area, *Usnea longissima* is infrequent in old-growth and late-successional conifer stands, in hardwood stands and in riparian areas; it can be locally abundant. It tends to reach its greatest biomass in old-growth/late-successional stands on upper slopes or ridges; in one study, stand age is the most significant variable in predicting suitable habitat for *U. longissima* (Keon 1999). In British Columbia, *U. longissima* is frequent, in localized areas, over conifers and secondarily occurs on deciduous trees and shrubs in open, humid coastal

localities, especially in old-growth forests at lower elevations (Goward 1999). Known from 26 sites in California and Curry, Josephine, and Jackson Counties in southern Oregon.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include random grid surveys on CVS/FIA plots and purposive surveys. This species has not been detected from any CVS/FIA in the “Category A” portion of the species range. It has been detected from 11 CVS plots in Oregon. Three new locations were discovered while conducting purposive surveys in northern California.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine the species range within “Category A” portion of the range.
2. Determine if species meets criteria for inclusion in Survey and Manage (“Category F” portion of range).

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid specimen identification and data analysis on CVS/FIA plots.
2. Conduct purposive surveys in northern California and southwest Oregon (“Category A” portion of range).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Since this species is easily identifiable in the field additional locations from purposive surveys and incidentally will provide additional locations.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid survey specimen identification and data analysis is a high priority.
 2. Conducting purposive surveys in northern California is a lower priority.
-

APPENDIX 4 - BRYOPHYTES

***Brotherella roellii* (Ren. & Card. in Roll) Fleisch. (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Brotherella roellii is endemic to the Pacific Northwest and is known only from southwestern British Columbia and Washington. There are five historic records from Washington with the most recent collection occurring in 1913. The five records occur in Jefferson, Pacific, Pierce, and Skagit counties and may or may not be on federal land. *Brotherella roellii* is suspected to occur along the coast and low elevation valley bottoms of the Olympics and Cascades of Washington. Recent observations made in British Columbia at a known *B. roellii* site found this species growing in a mixed stand of birch (*Betula* sp.) alder (*Alnus rubra*) and several big leaf maple (*Acer macrophyllum*) trees. This was in a flood plain area at the base of a large granitic cliff complex. On rotten logs it often occurs with the following bryophyte species: *Hypnum circinale*, *Tetraphis pellucida*, *Lepidozia areptans*, *Blepharostoma trichophyllum* and *Cephalozia media*.

Brotherella roellii can be confused with *Hypnum circinale*, a similar species that may grow in association with *Brotherella*. *Hypnum circinale* is a larger moss, dull grayish-blue-green color, with longer, linear falcate or circinate leaves. Microscopic characteristics must be used to distinguish between the two species.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic survey efforts for this species include the random grid survey on CVS/FIA plots and conducting surveys at historic locations. There have been no detections of this species on random grid survey. The historic site at Dosewallips State Park (Olympic Peninsula) was surveyed with negative results.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Are historic sites still extant?
2. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Re-visit historic locations to determine if species/habitat is still present. If species is located at historic locations, survey additional nearby habitat.
2. Complete data analysis of random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Determine if species is still extant at historic locations.
2. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Surveys to re-locate this historic location and data analysis of random grid data are a high priority.
-

***Buxbaumia viridis* (DC.) Moug. & Nestl. (E California only)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Pacific Northwest *B. viridis* occurs in Alberta, British Columbia, Colorado, Idaho, Montana, Oregon, Washington and in northern California where it reaches the southern edge of its range. In northern California, three sites occur on National Forest lands, in Del Norte, Humboldt, and Trinity counties. One site occurs on state land in Mendocino County. It occurs on decay class 4-5 rotten wood in mixed conifer stands.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and known site surveys. There have been no detections of this species on FIA plots in California. One location was found while conducting purposive surveys on 100 acres in northern California.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage.
2. Does the reserve network provide for this species?
3. Is the species associated with late-successional forests?
4. What is the distribution and abundance of this species in northern California?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
-

***Diplphyllum plicatum* Lindb. (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Occurs from northeastern Asia around coastal Alaska and British Columbia south to Oregon. Known from approximately 80 sites. Most of the sites occur on the Coos Bay BLM, but it has also been collected from the Olympic Peninsula and northern Cascades of Washington. At the present time, this liverwort is thought to be associated with late successional stands (USDA, USDI Species Review Panel 2001, 2002). *Diplphyllum plicatum* occurs in cool habitats with high humidity. It is found on both organic and inorganic substrates. Known substrates have included decayed wood, downed logs, trunks of Douglas-fir (*Pseudotsuga menziesii*), Pacific yew, (*Taxus brevifolia*), red cedar (*Thuja plicata*), red alder (*Alnus rubra*), and Sitka spruce (*Picea sitchensis*), mineral soil and rock. It occurs on moist facing north-facing cliffs, especially in shaded cliff crevices along river and stream banks, and on soil of upturned root wads.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. This species was recently found from one CVS plot on Coos Bay. Several known site surveys have been completed in the last few years. The historic site at Cape Perpetua was re-discovered while conducting a purposive survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine species range within the Northwest Forest Plan area. Species range is split between southern sites on Coos Bay BLM and northern sites on the Olympic Peninsula and northern Washington Cascades. Does this species occur in potential habitat between these two areas?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in central/northern Oregon Coast Range.
3. Collect habitat data from known site surveys.
4. Develop a potential habitat map from known site survey data.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Complete the random grid survey and analyze data. Conduct purposive surveys within the range of the species, using personnel with experience in identifying this species, with emphasis in potential habitat between the Olympic Peninsula and southern Oregon Coast Range. Develop a potential habitat map for this species by using known site survey data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known site surveys will provide more detailed habitat information that can be used for developing potential habitat maps.
3. Purposive surveys, by experienced personnel, may locate additional sites and fill in range gaps for this species. These would also provide additional locations for known site surveys.
4. Developing a potential habitat map for this species can focus strategic survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of specimen identification and data analysis for random grid surveys is a high priority.
2. Purposive surveys in the central and northern Oregon Coast Range are high priority, while surveys on the Olympic are a moderate priority.
3. Conducting known site surveys is a high priority.
4. Developing a potential habitat map is a high priority.

***Herbertus aduncus* (Dicks.) S. Gray (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This liverwort is circumboreal and known in western North America from Alaska, British Columbia, Washington and becomes very rare in Oregon. Currently it is known from 9 sites within the Northwest Forest Plan area. In Washington it is known on Federal lands in Clallam, Snohomish, Whatcom, counties and on private land in Jefferson County. In Oregon where it reaches the southern edge of its range it is known from several locations in the Columbia River Gorge and on state land in Clatsop County. *Herbertus aduncus* occurs on both organic and inorganic substrates including rotting trunks, bark, (e.g. red alder (*Alnus rubra*), yellow cedar, (*Chamaecyparis nootkatensis*), Lodgepole pine (*Pinus contorta*), duff, hummocks in bogs, cliffs, rocks in outcrops and boulders

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no detections of this species on the random grid survey. Two new locations were discovered in the Columbia River Gorge while conducting purposive surveys on 260 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species meet the criteria for Survey and Manage?
2. Does the reserve network provide for this species?
3. Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in high likely habitats in the Columbia River Gorge.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Purposive surveys may continue to locate additional sites.

2003 STRATEGIC SURVEY PRIORITY

1. Purposive surveys for this species in the Columbia River Gorge are a high priority.
2. Complete specimen identification and data analysis for random grid surveys.

***Iwatsukiella leucotricha* (Mitt.) Buck & Crum (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Iwatsukiella leucotricha is part of a North Pacific distribution pattern with the majority of the populations known from Japan and the Russian Far East. Within the Pacific Northwest this species was previously known only from two locations in Oregon, both on non-federal land. Recent purposive surveys have resulted in additional 5 new sites in Washington, four on the Olympic National Forest and one on State land in Pacific County. This species occurs on bark in fog-drenched areas along ridges or on exposed peaks. Predominantly it has been found on true fir trees, (*Abies* sp.) Tree trunks and rarely on alder (*Alnus* sp.) trees.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no detections of this species on the random grid survey. Six new locations were discovered while conducting purposive surveys on 200 acres on the Olympic National Forest.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?
2. What are the habitat requirements for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete specimen identification and data analysis of random grid surveys on CVS/FIA plots.
2. Purposive surveys in high likely habitat on Olympic Peninsula (Martin Huttman and Judy Harpel).
3. Conduct known site surveys to collect habitat data at recently located sites.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Complete random grid surveys and summarize data. Revisiting historic locations may not be as necessary since new locations have been discovered. Conduct purposive surveys in vicinity of known sites and high likely habitat. Collect habitat data from known site surveys that may be used to develop a potential habitat map.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Collecting habitat data through known site surveys may be used to develop potential habitat maps and focus strategic survey efforts.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Continue to conduct purposive surveys in potential habitat on the Olympic Peninsula are a high priority.
3. Conducting known site surveys at recent locations is a high priority.

***Kurzia makinoana* (Steph.) Grolle. (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Kurzia makinoana has a North Pacific distribution, which includes Japan, Siberia, Alaska, and the Pacific Northwest. Within the range of the Northwest Forest Plan there are four known sites. Three of the sites occur on federal land in Clallam, and Snohomish counties in Washington, one site is in Coos County, Oregon and there is one site on state land in Del Norte County, California. There is current

Appendix 4 – Bryophytes

taxonomic debate surrounding this species and closely related species within the genus *Kurzia*. Due to this taxonomic confusion, there is uncertainty regarding its distribution pattern (FSEIS vo. 1, p. 224-227). *Kurzia makinona* occurs on rocky cliffs and ledges, soil banks, and cuts, and on decayed wood, rarely on the base of trees, in shaded moist sites or in bogs.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species is the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?
2. What is this species habitat requirements?
3. Are the historic locations still extant?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Re-visit historic locations of this species to determine if they are still extant and if found collect habitat information.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

The random grid survey will be completed, including data analysis in 2003. Re-visiting the historic locations should also occur either in 2003 or 2004. If there are no detections on the random grid and the historic locations are not found then strategic surveys may be considered completed since further strategic surveys are not likely to contribute additional significant information about this species distribution, relative rarity, range, habitat associations, and other objectives (Condition 2, ROD, page S&G-30).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Re-visiting historic locations will attempt to locate the species, determine if its still extant, and collect habitat data.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Re-visiting historic locations is a high priority.

***Marsupella emarginata* (Ehrh.) Dum. var. *aquatica* (Lindb.) Dum. (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Previously *Marsupella emarginata* var. *aquatica* was known from only one site at Waldo Lake, Willamette National Forest in Lane Co. Recent purposive surveys have located a new site in Snohomish County on the Mt. Baker-Snoqualmie National Forest. If this variety is accepted as valid then it could occur in any cold, perennial stream within the Cascade Range. This variety occurs submerged on rocks or along the margins of perennial streams.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys. This species has not been detected on the random grid survey. One new location was found on the Mt Baker-Snoqualmie National Forest while conducting purposive surveys on 50 acres.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

The random grid survey will be completed, including data analysis in 2003. If there are no detections on the random grid and an assessment of this species habitats is made then strategic surveys may be considered completed since further strategic surveys are not likely to contribute additional significant information about this species distribution, relative rarity, range, habitat associations, and other objectives (Condition 2, ROD, page S&G-30).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Purposive surveys for this species are a moderate priority.

***Orthodontium gracile* (Wils. In Sm. & Sowerby) Schwaegr. ex B.S.G. (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Orthodontium gracile is known from Europe, Great Britain, northern California and southwestern corner of Oregon. In California and Oregon it is found associated only with the coast redwoods (*Sequoia sempervirens*). All most all of the known sites occur in State or National Parks in California although the distinction between state and national park is not clear in the historic records. There is one historic record from Oregon in the vicinity of the Chetco River. There is uncertainty regarding the identification of voucher specimens for this species within the Northwest Forest plan area (FSEIS vol.1, p. 227-228). Based on the taxonomic uncertainty surrounding recent collections from Oregon, it is difficult to determine the range and distribution of this species in Oregon.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey effort for this species is the random grid survey on CVS/FIA plots. This species has not been detected on any plots.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Following completion of the data analysis of the random grid survey on CVS/FIA plots an assessment will be made of what additional strategic surveys may be needed. Potential future strategic surveys could include a more focused survey in redwood forests in southwestern Oregon and northern California. This assessment should also include the amount of potential impacts that planned agency actions would have on this species. This assessment may indicate that no further strategic surveys are necessary for this species since objectives of strategic surveys have been accomplished and information is sufficient to conclude that existing or resultant management direction will provide a reasonable assurance of species persistence (Condition #1, ROD, page S&G-30).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
-

***Ptilidium californicum* (Aust.) Underw. (A in CA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Occurs along the west coast of North America from northern California to southeastern Alaska, and extends to northern Japan. Current information suggests that this species is common and widespread in Washington and Oregon. In California, this species appears to be restricted to mid-elevation and occurs on a variety of tree species. Of the 228 sites in California, about 95 are on the Siskiyou NF and are tightly clustered in a small area (USDA, USDI Species Review Panel 2001).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys in northern California. In California this species has been detected from three FIA plots on the Klamath National Forest. In Oregon and Washington this species was located on 160 CVS plots. Approximately 45 new locations were discovered while conducting purposive surveys on 2,625 acres on the Klamath and Six Rivers National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the species range and distribution within northern California?
2. What are the specific habitats within northern California?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in high likely habitats in northern California (Klamath and Six Rivers National Forests). From purposive survey results in 2002 this species appears to be one of the few species where this survey type is effective.
3. Conduct known site surveys for this species to collect habitat information.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Purposive surveys should locate more sites of this species in northern California.
3. Known site surveys will provide more habitat information about this species.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
 2. Continuing to conduct purposive surveys in California is a high priority.
 3. Conducting known site surveys is a high priority.
-

***Racomitrium aquaticum* (Brid. Ex Schrad.) Brid. (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Pacific Northwest, this species is known from the Coast and Cascade Ranges and from the Siskiyou and Klamath Mountains, ranging from northern California to Alaska. Data on habitat and distribution within the Northwest Forest Plan area is limited at this time. It is reported from 28 sites in the Northwest Forest Plan area from Washington, Oregon and California. Recently most of the western North American material of *R. aquaticum* has been proposed for a name change to *Racomitrium ryszardii*. It is a recent proposal that has not had time to be evaluated by the North American bryological community. Because of the taxonomic confusion over this species it is difficult to fully understand the range and distribution of this species within the Northwest Forest Plan area.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots. There have been four detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Are recent collections of this species actually *Racomitrium aquaticum*.
2. What is the status of this species at recently located sites.
3. What is the range and distribution of this species within the Northwest Forest Plan area?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Re-visit known sites to collect voucher specimens to determine if these sites are actually *R. aquaticum*.
2. Complete data analysis of random grid surveys on CVS/FIA plots.
3. Conduct known site surveys at locations found on the random grid survey.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Re-visiting known sites and collecting additional voucher specimens will provide information on taxonomy/description of species.
2. Locations of this species found in the CVS/FIA random grid survey may provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

Appendix 4 – Bryophytes

3. Known site surveys will collect more detailed habitat data.

2003 STRATEGIC SURVEY PRIORITY

1. Re-visiting known sites to collect additional voucher specimens is a lower priority.
 2. Complete specimen identification and data analysis for random grid surveys is a high priority.
 3. Known site surveys are a high priority.
-

***Rhizomnium nudum* (Britt. & Williams) Kop. (B in Oregon only)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This moss occurs from Japan, the Russian Far East, Alaska, British Columbia south to Oregon. It is well established and distributed in Washington but reaches the southern edge of its range on the Umpqua National Forest in southern Oregon. Currently there are only 16 known sites in Oregon, mostly on the Mt. Hood and Willamette National Forests. *Rhizomnium nudum* occurs on moist forest humus soil, in coniferous forests mostly at mid to high elevations, sometimes near seepage areas.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, purposive surveys, and known site surveys. This species has been detected on two CVS plots in Oregon (Umpqua and Willamette National Forests). Numerous known site surveys have been completed for this species over the last few years. A total of 14 new locations were found throughout the range while conducting purposive surveys on approximately 2,000 acres. Currently this species has not been found in California.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the species range and distribution within the Northwest Forest Plan area in Oregon?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Develop a potential habitat map using known site survey data.
3. Continue to conduct known site surveys for this species in Oregon.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

Following completion of the data analysis of the random grid survey on CVS/FIA plots an assessment will be made of what additional strategic surveys may be

needed. Since this species has numerous detections on the random grid survey, this may be enough information to meet conditions for completing strategic surveys, or identify areas within the species range where strategic surveys are no longer needed. If this species does not meet those conditions, then additional surveys would be needed, possibly in selected portions of the species range to fill needed information gaps.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Locations of this species found in the CVS/FIA random grid survey will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known site surveys will collect habitat data that can be used to help develop potential habitat maps.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Developing a potential habitat map is a moderate priority.
3. Conducting known site surveys is a high priority.

***Schistostega pennata* (Hedw.) Web. & Mohr. (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

In the Pacific Northwest *S. pennata* is known from Montana, Oregon, Washington northward through British Columbia to Alaska. In Washington it is reported from the Olympic National Park, Mt. Baker-Snoqualmie, Olympic, Okanogan, Wenatchee, and Gifford Pinchot National Forests. In Oregon it is known from Deschutes, Mt. Hood, Umpqua, and Willamette National Forests and from Salem District BLM. *Schistostega pennata* occurs on mineral soil in shaded pockets of overturned tree roots, often with shallow pools of standing water at the base of the root wad. It also grows attached to rock or mineral soil around the entrance to caves, old cellars and animal burrows. The primarily microhabitat requirements for this species are dense shade, high humidity, and some source of reflective light (i.e. a pool of water.) which gives the protonemal mat a glowing appearance.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid surveys on CVS/FIA plots, known site surveys, and purposive surveys. There have been no detections of this species on the random grid survey. Several known site surveys have been completed over the last two years. Purposive surveys have contributed approximately 14 new sites from the Mt Hood and Okanogan National Forests.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is species range within the Northwest Forest Plan.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in high likely habitats and in association with surveys for other bryophyte species.
3. Complete ongoing known site surveys and develop first potential habitat map.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Purposive surveys for other bryophyte species may locate additional sites of this species.
3. Known site survey analysis will lead to map showing potential habitat for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Completing additional known site surveys is a high priority.
3. Development of a potential habitat map and microsite models is a high priority.

***Tetraphis geniculata* Girg. Ex Milde (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Tetraphis geniculata in the Pacific Northwest is known from Alaska, British Columbia, Washington, Oregon and is suspected to occur in northern California. In Washington known sites occur on the Olympic, Mt. Baker-Snoqualmie, and Gifford Pinchot, National Forests. In Oregon it is known from only three sites, two on the Mt. Hood National Forest and one on Salem District BLM in Oregon. *Tetraphis geniculata* occurs on the cut or broken ends, or lower sides of large (usually over 15 inches in diameter in Oregon and Washington), decay class three, four and five rotted logs or stumps. It occasionally is found on peaty soil in moist coniferous forests.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots, known site surveys, and purposive surveys. This species has been detected on one CVS plot on the Gifford Pinchot National Forest. Several known site

Appendix 4 – Bryophytes

surveys have been completed for this species. No new locations were found while conducting purposive surveys for this species on 600 acres of potential habitat.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is species range within the Northwest Forest Plan.
2. How different genetically is this species from the more common *Tetraphis pellucida*?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Complete ongoing known site surveys and develop first potential habitat map.
3. Work with a university to look at genetics of *T. geniculata* and *T. pellucida*.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known site survey analysis will lead to map showing potential habitat for this species.
3. Genetic study will provide information about the genetics of these two *Tetraphis* species.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Completing additional known site surveys is a high priority.
3. Development of a potential habitat map is a high priority.
4. Genetic study is a lower priority.

***Tritomaria exsectiformis* (Briedl.) Schiffn. (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Previously this species was only known from the Deschutes and Umpqua National forests in Oregon. Recent purposive surveys have extended its range to Washington where it has been found on the Olympic and Wenatchee National Forests. Currently there are 15 known sites for this species. This species occurs on humus over rotting logs, boulders and is usually associated with low volume, perennial water flow at springs, seeps and fens.

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no detections of this species on the

Appendix 4 – Bryophytes

random grid survey. Purposive surveys were initiated in 2001 on the Wenatchee and Okanogan National Forests and two new locations were discovered. An additional 1,500 acres were surveyed in 2002 with no new detections.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is this species range in the Northwest Forest Plan area, specifically in eastern Washington Cascades and down in the Oregon Cascades.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete purposive survey efforts in eastern Washington and begin in Oregon.
2. Complete data analysis of random grid surveys on CVS/FIA plots.
3. Conduct known site surveys at the recently located sites and any additional sites located in 2002.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Following completion of the data analysis of the random grid survey on CVS/FIA plots an assessment will be made of what additional strategic surveys will be needed. This assessment will need to address if any of the four conditions for completing strategic surveys have been met or what additional surveys are needed and where.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known site surveys will provide initial information on species habitat and possibly be used to develop potential habitat maps.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Known site surveys are a moderate priority and will be done opportunistically.

***Tritomaria quinquedentata* (Huds.) Buch (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Tritomaria quinquedentata has a circumboreal distribution and is known in the Pacific Northwest from northwestern Washington and northwestern Oregon. Known from 12 sites within the range of the Northwest Forest Plan. New locations were found in the eastern Washington Cascades while conducting purposive surveys during the summer of 2001 (Dewey pers. comm.). Habitat data is limited (FSEIS vol.1, p. 228-229).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and purposive surveys. There have been no detections of this species on the random grid survey. Purposive surveys were initiated in 2001 on the Wenatchee and Okanogan National Forests and one new location was discovered. An additional 1,500 acres were surveyed in 2002 with two new detections.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?
2. Is species still extant at historic locations?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Re-visit historic locations to determine if sites are still extant.
2. Complete data analysis of random grid surveys on CVS/FIA plots.
3. Conduct known site surveys at recently located sites.
4. Conduct additional purposive surveys in the Eastern Washington Cascades and in Oregon.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Following completion of the data analysis of the random grid survey on CVS/FIA plots an assessment will be made of what additional strategic surveys will be needed. This assessment will need to address if any of the four conditions for completing strategic surveys have been met or what additional surveys are needed and where.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Complete specimen identification and data analysis for random grid surveys.
2. Known site surveys are considered a low to moderate priority.
3. Conducting additional purposive surveys is a high priority in the Eastern Washington Cascades and Oregon.

APPENDIX 5 – VASCULAR PLANTS

***Arceuthobium tsugense* var. *mertensiana* (F in WA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area this species is known from eleven sites in this portion of the range. All of these sites have all been located since 1993. All sites are in reserves and most habitats are late-successional. This species is parasitic on Mountain Hemlock (*Tsuga mertensiana*).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. Three collections of *Arceuthobium* were made from these surveys and have been sent off for identification.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage. Does the reserve network provide for this species? Is the species associated with late-successional forests?
2. What is the range and distribution of this species within this portion of the species range?
3. How much of the mountain hemlock plant series is in the reserve network?
4. Is this species an obligate parasite on mountain hemlock?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS plots in Washington.
2. Develop map showing mountain hemlock plant series with land use allocations.
3. Conduct purposive surveys in mountain hemlock plant series.
4. Conduct a literature search to determine if this species is an obligate parasite with mountain hemlock.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats in Washington.
2. Developing a map showing mountain hemlock plant series and land use allocations will provide information about how much of this species' habitat occurs in reserve land-use allocations.
3. Purposive surveys should locate additional sites in high-likely habitat.
4. Conducting a literature search will determine if this species is obligate or facultative.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.

2. Habitat/land use allocation map is a lower priority.
 3. Conducting a literature search for determining if this species is an obligate with mountain hemlock is a low priority (but could easily be completed).
 4. Conducting purposive surveys is a low priority.
-

***Bensoniella oregana* (A in CA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 25 sites within the portion of California (several more sites are known from southwestern Oregon) covered by the NFP area with all but one of these occurring on private lands. It is limited to the Klamath Mountain Province and Coast Range of southwest Oregon and northwest California. Prolonged moisture, edge habitat along streams and meadows providing partial canopy cover, and soils derived from ancient sedimentary rock are key habitat components.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage (Is this species associated with late-successional/old-growth habitats?; and does the network of reserves provide for this species? .

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on FIA plots in California.
2. Conduct purposive surveys in high-likely habitat on Six Rivers, Klamath, and Shasta-Trinity National Forests.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Provide information on species distribution and habitats in California.
2. Purposive surveys may locate new sites in California on federally managed lands.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
 2. Conducting purposive surveys in northern California is a high priority for northern California.
-

***Botrychium minganense* (A in OR, CA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 locations with 16 locations known from Oregon and California. It occurs on the Mt. Hood, and Willamette National Forests as well as the Eugene District BLM. This species also occurs in Canada and most western and northern states. Most populations in Oregon and east of the Cascades in Washington are associated with riparian zones and old-growth western red cedar in dense shade, sparse understory, an alluvium substrate, and often a duff layer of *Thuja* branchlets (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and collecting habitat data by conducting known site surveys. There have been no detections of this species from this survey. Approximately 15 known site surveys have been completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Define habitat for species in Oregon and California.
2. Define species range and distribution in Oregon and California.
3. Does the reserve system in Oregon and California provide for a reasonable assurance of persistence?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots in Oregon and Washington.
2. Continue to conduct known sites surveys in Oregon and California to collect habitat data.
3. Develop a potential habitat map from known site survey data collected in Oregon, California, and possibly Washington.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Known site surveys will collect habitat data that can be used to help develop potential habitat maps. These potential habitat maps may eventually help focus pre-disturbance surveys for this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Conducting known site surveys is a high priority.
3. Developing a potential habitat map is a lower priority.

***Botrychium montanum* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 68 locations within the Northwest Forest Plan area; 34 sites have been located since 1993. It is reported from British Columbia, Washington, Oregon, California, Montana, and Idaho. It occurs in well-shaded coniferous forests, usually near swamps and streams from 3,300-9,800 ft in elevation. Within the Northwest Forest Plan area, the typical habitat for *B. montanum* has been characterized as *Thuja plicata* swamps in the Cascades of Oregon and Washington. On the west side of the Cascade Range, this species seems to require shady, relatively moist (but not flooded) sites, with a minimum of understory competition. There may be a mycorrhizal association between western red cedar and *Botrychium montanum* (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and collecting habitat data by conducting known site surveys. There have been no detections of this species from this survey. Approximately 10 known site surveys have been completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. There are no information needs that will be answered by strategic surveys.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. No strategic surveys will be conducted for this species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. No benefits.

2003 STRATEGIC SURVEY PRIORITY

1. No priorities for this species.

***Coptis asplenifolia* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 13 sites within the Northwest Forest Plan area. Nine of these sites have been located since 1993 through model validation strategic surveys. This species has a very restricted range and is not expected outside of northwest Washington. Reaches the southern extent of its range in the Washington Cascades of the Pacific Northwest, but is more common to the north

Appendix 5 – Vascular Plants

in coastal British Columbia and Alaska. Habitat requirements appear to be moist, cool, mossy sites, in old-growth forests with a well-developed litter layer, below 2800 ft elevation (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and modeling potential habitat on the Mount Baker-Snoqualmie National Forest. No locations of this species have been found on the random grid survey. A habitat model for this species has been completed including the validation surveys.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Provide information on what represents high-likely habitat for this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete analysis of potential habitat modeling to determine amount of habitat in reserve networks to determine if the reserves provide for this species.
2. Complete analysis of random grid surveys on CVS/FIA plots.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Completion of habitat model will provide information of potential habitat, how much of that potential habitat is in reserves, and possibly be used to refine survey protocols.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Analysis of potential habitat is the highest priority.

***Coptis trifolia* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species has a circumboreal range from Greenland to Alaska and eastern Asia south to North Carolina, Iowa, Idaho, and Oregon. Within the Northwest Forest Plan area, it is known from two sites on the Mt. Hood National Forest and one site on the Confederated Tribes of Warm Springs land. In Oregon, the species occurs on hummocks above saturated soils on the margins of boggy, wet, seepage areas within mature coniferous forests in the Western Hemlock and Silver Fir Zones at an elevation 3280 to 3800 ft. Both federal sites occur within Riparian Reserves located in a Matrix allocation. The site on the Warm Springs Reservation is 20 ft from Matrix land on the Mt. Hood National Forest (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if known sites are still extant.
2. Locate more sites of the species within the Northwest Forest Plan area.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites to determine if species/habitat is still present.
2. Complete data analysis of random grid surveys on CVS/FIA plots.
3. Conduct purposive survey in potential habitat in the vicinity of known sites.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting known sites will determine if species and/or habitat is still present at these locations.
2. Random Grid survey data analysis will help determine extent of species occurrence, distribution, range, and LSOG association.
3. Additional surveys in high likely habitat may increase the number of populations within the Northwest Forest Plan.

2003 STRATEGIC SURVEY PRIORITY

1. Revisiting known sites to determine if species is still extant and conducting purposive surveys in the similar habitat is a moderate priority.
2. Completion of random grid surveys and data analysis is a high priority.

***Corydalis aquae-gelidae* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 sites within the Northwest Forest Plan area. Only three sites have been located since 1993. Most sites occur on federal lands managed by the Gifford Pinchot National Forest, Mt. Hood National Forest, or Bureau of Land Management, Salem District. Habitat requirements include a close proximity to seeps, springs, or streams with relatively cold water, a substrate of gravelly-sand, upper level canopy closure of 70 to 90 percent, and little herbaceous competition. Known sites are between 1200 and 4260 ft elevation. All known sites are within Riparian Reserves, of which approximately 67% are within the Matrix land allocation. The majority of the remaining sites occur within late-successional reserves (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage.
2. Does the Riparian Reserve network provide for this species?
3. Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in additional high-likely habitats in areas where gaps in known sites occur.
3. Survey fringe of species range to determine extent of range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Random Grid survey data analysis will help determine extent of species occurrence, distribution, range, and LSOG association.
2. Additional surveys in areas where data gaps occur and the fringes of the species range will help determine the range, habitats of the species within the Northwest Forest Plan.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Purposive surveys are a high priority.

***Cypripedium fasciculatum* (C)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, it is known from over 900 sites. Most recent sites have very small populations, numbering less than 10 individuals per location. Although the number of sites is high this species is still considered at risk due to the species biology. Within the Northwest Forest Plan area, this species is known from the Cascade Range of Washington, Oregon, and Coast Ranges of northern California, the western interior valleys of Oregon, and the Klamath Mountains of southern Oregon and northern California. Populations also exist in Idaho, Montana, Wyoming, Utah, and Colorado. *C. fasciculatum* occurs in a variety of habitats throughout its range that vary greatly in soils, elevation, aspect, and plant communities (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the range and distribution of this species within the NWFP area?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct purposive surveys in high-likely habitats within areas of known locations (Washington Cascades, southwest Oregon).
3. Revisit known sites (if they can be re-located) to collect habitat information.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Additional surveys may locate more known sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low to moderate priority.

***Cypripedium montanum* (C except Washington Eastern Cascades)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from Alaska to northern California east to western Alberta, Montana, Idaho, and Wyoming. Within the Northwest Forest Plan area (except Eastern Washington), it is known from approximately 400 sites. It is considered to have a widespread range throughout the Northwest Forest Plan but with limited numbers and a scattered distribution west of the Cascades. This species occurs in a wide variety of habitats. The dominant overstory vegetation ranges from dry ponderosa pine forest to moist grand fir and cedar. The range in canopy cover varies from less than 30% to greater than 60%. The limiting factor to colonization is most likely related to the presence of mycorrhizal symbionts. Approximately 60% of the known sites occur on federal land and approximately 1-19% of sites are within protective land allocations (LSRs, wilderness, etc.).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage.

Appendix 5 – Vascular Plants

2. Does the reserve network provide for this species?
3. Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Conduct known site surveys to determine habitat characteristics and LSOG association?

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Random grid will provide coarse scale information regarding distribution in the Eastern Washington Cascades province.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
-

Eucephalis vialis (Aster vialis) (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 89 sites within the Northwest Forest Plan area. Found in Lane, Douglas, and Linn Counties, Oregon. This species is considered a Willamette valley endemic and is found primarily within the Willamette Valley Physiographic Province with a few sites found along valley margins of the eastern Coast Range. This species occurs in coniferous forests at elevations of approximately 500 to 3,150 ft. Typically occurs on dry upland sites dominated by *Pseudotsuga menziesii*, and is usually accompanied by hardwoods of drier forests such as *Arbutus menziesii*, *Chrysolepsis chrysophylla*, and *Quercus garryana*. Occurs in sites representative of all stages of succession from recent clear-cuts to mature forest. Canopy gaps are particularly important. Most federal sites exist on the Eugene and Roseburg BLM Districts within Matrix land allocations (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage.
2. Does the reserve network provide for this species?
3. Is the species associated with late-successional forests?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots.
2. Complete purposive surveys in high-likely habitat within the species range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Known site survey data analysis will help determine extent of species occurrence, distribution, range, and LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Purposive surveys for this species are a low priority.
3. Known site surveys high priority (habitat studies related to LSOG.)

***Galium kamtschaticum* (A in the Olympic Peninsula, WA Eastern Cascades, OR and WA Western Cascades Physiographic Provinces, south of Snoqualmie Pass)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is circumboreal in distribution; occurs sporadically from Kamchatka and Korea, through the Aleutian Islands and the Alaska panhandle, to the Olympic Mountains and Cascade Range of Washington. Within the Northwest Forest Plan area, it has been documented on the Mt. Baker-Snoqualmie, Wenatchee, and Olympic National Forests. Inhabits moist, cold, coniferous forests and mossy places throughout its range (Vascular Plant Management Recommendations 1998). Only 11-14 sites are known within the Northwest Forest Plan area south Snoqualmie Pass, where it is considered to be very rare.

STATUS/RESULTS OF STRATEGIC SURVEYS

The only strategic survey for this species has been the random grid survey on CVS/FIA plots. There have been no detections of this species from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Are there locations in the reserve network?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete data analysis of random grid surveys on CVS/FIA plots for plots south of Snoqualmie Pass.
2. Conduct purposive surveys in high-likely habitat on the Olympic Peninsula and northern Gifford Pinchot and Wenatchee NF.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Purposive survey data analysis will help determine extent of species occurrence, distribution, range, and LSOG association.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys and data analysis is a high priority.
2. Purposive surveys are high priority.

***Platanthera orbiculata* var. *orbiculata* (*Habenaria orbiculata*) (C)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from almost 150 sites within the Northwest Forest Plan. It has a sporadic distribution in northern Washington and has been documented on federal lands of the Mt. Baker-Snoqualmie and Colville National Forests, North Cascades National Park, and Ross Lake National Recreation Area. It is not a species of rare or special habitats. In this region, *P. orbiculata* is probably limited by its interactions with other organisms as much as environmental factors. Land allocation analysis was based on about 70% of the reported populations. Approximately 64% of those populations were on LSR and 2 sites were in Wilderness areas (Vascular Plant Management Recommendations 1998).

STATUS/RESULTS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS/FIA plots and modeling potential habitat on the Mount Baker-Snoqualmie National Forest. One detection of this species has been found on the random grid survey. A habitat model for this species has been completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if this species meets the criteria for Survey and Manage.
2. Does the reserve network provide for this species?
3. Is the species associated with late-successional forests?
4. Determine habitat requirements for this species within the range of the northern spotted owl.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid data analysis on CVS/FIA plots.
2. Complete data analysis for potential habitat model on the Mount Baker-Snoqualmie National Forest.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Habitat model will help determine extent of species occurrence, distribution, range, and LSOG association.
2. Complete data analysis of potential habitat model.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of analysis of potential habitat model is a high priority.
2. Completion of random grid surveys and data analysis is a high priority.

Appendix 6 – Arthropods

APPENDIX 6 - ARTHROPODS

Four Functional Guilds (Canopy Herbivores (south range), Coarse Wood Chewers (south range), Litter and Soil Dwelling species (south range), Understory and Forest Gap Herbivores (south range)). South range is defined as Oregon Klamath, California Klamath, California Cascades, California Coast Range Physiographic Provinces.

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

These guilds were included in Survey and Manage was a concern that their ecological functions may not persist in the south range. Reasons for concern include the high number of endemic species with very limited ranges, potential for drought, significant risk of fire, patchy distribution of suitable habitats, and past management activities. The intent of Survey and Manage is to acquire additional information on community composition, abundance, and distribution and to determine appropriate levels of protection, not to specifically protect any species of arthropods (FSEIS page 320).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Do these guilds meet the criteria for inclusion on the Survey and Manage list?
2. What is the proper management for these guilds?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete analysis of previous landscape level surveys for arthropods in southern Oregon and northern California to determine status of these guilds and if they still meet criteria as Survey and Manage species.
2. Identify information needs for the four guilds.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. This information may provide information whether these guilds of arthropod meet the criteria for inclusion in Survey and Manage.
2. Completion of previous survey efforts will provide information what future surveys are needed to answer the information needs.

PRIORITY

1. Strategic survey work for arthropods is low priority.
-

APPENDIX 7 - MOLLUSKS

***Ancotrema voyanum* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from northern Klamath County, California to southern Trinity County, California. Locations occur on the Klamath, Six Rivers, and Shasta-Trinity National Forests. There are over 100 locations of this species, all occurring on federal lands. This species is known from intermediate elevations, 550 to 3,150 feet. Specific habitats depend on 1) perennial subsurface dampness, 2) late-successional conditions including old coarse woody debris, leaf mold of deciduous hardwoods, and a relatively closed canopy.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG/GOBIG2K surveys in northern California. Several analyses of the species range, estimated abundances, and habitats have resulted from this survey by Dunk et al. (2002) and Cutler and Edwards (2003).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Is this species associated with riparian reserves?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct stratified random sampling of riparian and non-riparian habitats throughout the species range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Completion of stratified random sample of riparian/non-riparian habitats throughout species range will provide data about this species association with riparian habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work is a low priority for this species.
-

***Cryptomastix devia* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species inhabits areas of the western Cascade Range and Puget Trough at low to moderate elevations from southern Vancouver Island BC, Canada through western Washington into northwestern Oregon, and also the northern Oregon Coast Range. It is known from 148 locations within the Northwest Forest Plan area with 121 of these on federal lands. This species inhabits moist conifer

forests and may be restricted to riparian zones in dryer landscapes. It is usually found in association with bigleaf maple growing among conifers. It is often found under hardwood logs or leaf litter, or in the litter under sword ferns that are growing near or under the crown of bigleaf maple trees (Terrestrial Mollusk Management Recommendations October 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS plots in Oregon and Washington and a potential habitat map using the Potential Natural Vegetation (PNV) model. Results from the random grid are still pending. A first iteration map showing low-, moderate- and high-potential habitats has been completed.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What are the range of habitats of the species on the Olympic Peninsula and northern Washington Cascades on the Mount Baker-Snoqualmie National Forest?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct known site surveys at any recent discovered sites.
2. Build on the PNV potential habitat model using 2002 CVS data and other new locations.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Collecting habitat data through known site surveys will provide additional information for the habitat model that was developed with very little data.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work is a low priority for this species.

***Cryptomastix hendersoni* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 22 locations within the Northwest Forest Plan area with 18 of these occurring on federal lands. It occurs along seeps and streams on both sides of the Columbia River, from near The Dalles to Rufus. This species may also occur in upland sites on the Mt. Hood National Forest. In the Columbia River Gorge, sites are found under rocks and herbaceous vegetation along sun-lit margins of streams. Found under woody debris within closed canopies on the upland sites. The sites in the Gorge are either on non-federal land or outside of the planning area (Terrestrial Mollusk Management Recommendations, October 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Resolve taxonomic issues with this species. Determine if specimens collected from mid-elevations on the Mount Hood National Forest, that appear to represent this species are actually *C. Hendersoni*.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey on CVS plots in Oregon and Washington.
2. Evaluate specimens from locations on the Mount Hood National Forest by collecting additional voucher specimens to determine if these locations are actually *C. hendersoni*.
3. If known locations can be re-located, collect more detailed habitat data either through known site surveys or others to identify important habitat components.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Surveys in potential habitat on federal lands within Northwest Forest Plan area may determine if species occurs in the forest plan area.
3. Collecting habitat data at known locations can be used to identify if habitats occur on federal lands in the plan area. These data could be used to develop potential habitat maps or target purposive surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
2. Other strategic survey efforts are a low priority.

***Deroceras hesperium* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four locations within the Northwest Forest Plan area. The species range is wide but locations are scattered. It is known from the western slope of the Cascades to the Pacific Ocean and from northwestern Oregon to Vancouver Island, B.C. Habitat is largely unknown but, based on limited information, includes wet meadows, with varied low vegetation, litter, and debris;

rocks may also be used (Terrestrial Mollusk Management Recommendations October 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit vicinity of known locations to determine if species and/or habitat may still be present. The locations of these sites are poorly documented so it is anticipated that surveys will require a taxa expert.
2. Determine species habitat associations.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit historic locations where the species was previously observed.
2. Complete analysis of CVS random grid to determine if the species was located during these surveys.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. If enough detections of this species are made data can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance for persistence. Efforts to re-locate the known locations should occur within the next year.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from these surveys and if additional strategic surveys are needed. If the historic locations are found then additional surveys may be necessary. If the species is not found from these survey efforts then strategic surveys may be considered completed according to the ROD page S&G 30 (Condition 2: The objectives of strategic surveys have been accomplished and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives.).

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Revisiting known sites will attempt to collect a specimen and relocate the known site and collect habitat information.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Revisiting historic locations is a high priority.
-

Fluminicola new sp. 3 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from five locations in Klamath County, Oregon. One of these locations is known from Medford District BLM lands. It occurs in shaded areas in small, cold spring runs in very shallow water with gravel-cobble substrates (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending. GOBIG surveys in northern California did not include aquatic mollusk species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the status of the population and habitat at the known locations?
2. Determine if species still meets criteria for inclusion on Survey and Manage list.
3. Does this species occur in other high potential habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in other high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Habitat descriptions of verified known sites will further refine the LSOG association of this species.
3. The species range will be better defined by surveying nearby potential habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

***Fluminicola* new sp. 11 (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from two sites that were both found prior to 1993. This narrowly endemic species is known only from Fredenburg Spring, which is tributary to the middle Klamath drainage. Cobble and gravel are substrates. This site occurs on land administered by the Medford District BLM (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending, but it is unlikely that this species will be detected from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if species still meets criteria for inclusion on Survey and Manage list.
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit location to determine status of population and quality of habitat.
2. Conduct surveys in other high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.
2. Conducting surveys in additional springs may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.

***Fluminicola* new sp. 14 (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 12 sites within the Northwest Forest Plan area with only three of these occurring on federal lands. Restricted to small, perennial, cold, shallow spring runs in the upper Sacramento system. This species prefers

Appendix 7 – Mollusks

spring habitats and substrates that include mud, silt, and sand with scattered gravel, cobbles, and boulders.

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if species still meets criteria for inclusion on Survey and Manage list.
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in adjacent high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.
2. Conducting surveys in additional springs may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Fluminicola new sp. 15 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from four sites, all of which were found prior to 1993. This species occurs in springs on both sides of the Sacramento River at Shasta Springs and Mossbrae Falls. There are no known sites on federal land. This species prefers small, perennial, cold springs or spring sources on gravel substrates (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if this species occur on federal lands in the Northwest Forest Plan?
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in adjacent high potential spring habitats on federal lands.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.
2. Conducting surveys in additional springs on federal lands may locate sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Fluminicola n. sp. 16 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 19 locations within the Northwest Forest Plan area, none of which are on federally managed lands. This species is an Upper Sacramento River endemic, restricted to the Shasta Springs area. Habitat for this species is restricted to springs and has been found in the lower portions of larger springs among water cress mostly on pebbles and cobbles. Elevation ranges from 744-915 meters (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if species still meets criteria for inclusion on Survey and Manage list.
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in adjacent high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.
2. Conducting surveys in additional springs may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Fluminicola new sp. 17 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from two locations that were found prior to 1993. Endemic to the upper Sacramento River and found only in the Shasta Springs area. This species occurs in the lower portions of larger springs, commonly on *Rorippa*. No known sites are on federal land (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if species still meets criteria for inclusion on Survey and Manage list (i.e. Does this species occur on federal lands in the Northwest Forest Plan area?).
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in adjacent high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat and if this species may occur on federal lands.
2. Conducting surveys in additional springs on federal lands may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Fluminicola n. sp. 18 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from three locations within the Northwest Forest Plan area with one of these occurring on federal lands. Two of these locations have been located since 1993. Occurs in the Upper Sacramento River and Pit River basins in small, perennial springs and spring headwaters. Found on the sides and undersides of stones in shaded areas (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

4. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
5. Determine if species still meets criteria for inclusion on Survey and Manage list.
6. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

3. Revisit locations to determine status of population and quality of habitat.
4. Conduct surveys in adjacent high potential spring habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

3. Revisiting locations will provide information on status of mollusk population and quality of habitat.
4. Conducting surveys in additional springs may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

2. Strategic survey work for this species is low priority.
-

Fluminicola n. sp. 19 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

No known sites are currently known to occur in the Northwest Forest Plan area. It is known from one cold, spring pool and outflow complex on the Lassen National Forest that is part of the source of Hat Creek and a tributary of the Pit River in Shasta Co., CA. It occurs among *Rorippa* and *Veronica* beds on sandy-gravelly substrates (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Does this species occur or is potential habitat present within the Northwest Forest Plan area?
2. Determine if species still meets criteria for inclusion on Survey and Manage list.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Survey known location and collect biotic and abiotic parameters of the spring to determine if suitable habitat is present within the Northwest Forest Plan area.
2. Survey high likely habitats in the vicinity of known sites.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Determine if suitable habitat is present within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Fluminicola n. sp. 20 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

No known locations are currently known for this species within the Northwest Forest Plan area. This species is endemic to the upper Sacramento and Pit River systems. It is known from two locations outside the plan area on Lost Creek, a

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single spring-fed creek on the Lassen National Forest. This species lives in swift-flowing water, near shore, on sand-cobble substrates and aquatic plants (*Rorippa* and *Cicuta*) (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusk species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location to determine if species is still present and collect information on biotic and abiotic parameters of the spring.
2. Determine if species still meets criteria for inclusion on Survey and Manage list, i.e. does this species occur on federal lands in the Northwest Forest Plan area.
3. Does this species occur in additional spring habitats?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.
2. Conduct surveys in adjacent high potential spring habitats on federal lands.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.
2. Conducting surveys in additional springs may locate additional sites of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.

***Fluminicola seminalis* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 15 locations within the Northwest Forest Plan area with five of them occurring on federal lands. This species is endemic to the Upper Sacramento River system and, on federal lands, known from Shasta-Trinity National Forest and the Whiskeytown-Shasta-Trinity National Recreation Area. This species is found in cool, clear, flowing water with gravel-cobble substrate or on soft, mud substrates in large spring pools (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species still meets criteria for inclusion on Survey and Manage list.
2. Revisit sites to determine if species is still present, collect better locality data and collect habitat information.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct purposive surveys at historic locations to determine status of species.
2. Conduct known site surveys at these locations to collect habitat information.
3. Conduct additional surveys in the vicinity of known sites and in high likely habitat to locate more sites.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting historic locations will provide updated information on status of species.
2. Collecting habitat information from known site surveys will provide information on species specific habitat features.
3. This information may provide information if this species still requires Survey and Manage as a mitigation measure.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.

***Helminthoglypta talmadgei* (D)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 761 sites within the Northwest Forest Plan area. Occurs only in the California Klamath Province where it has a moderately patchy distribution. Habitat is not well documented but, for Klamath Co. locations, is described as two types in close proximity to each other; late seral mixed conifer/hardwood and oak forests for refugia and open areas with herbaceous vegetation for foraging, mostly under 3000 ft elevation. This species does not appear to be associated with riparian habitats.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS plots in Oregon and Washington and the GOBIG surveys in northern California. Results

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from this CVS survey are still pending. Dunk et al. (2002) and Cutler and Edwards (2003) have completed analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. More detailed description of habitat used by species may be gained from further analysis of FIA plot data details.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Visits to known sites with quantitative descriptions of rock habitat elements available for refugia, compared to large diameter logs, canopy cover and vegetation age/structure, and variability of these feature over small scales.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Management recommendations for high-priority sites may be improved by refinement of habitat model.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is a high priority to improve high priority site management recommendations.
-

***Hemphillia burringtoni* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from approximately 55 sites within the Northwest Forest Plan area, with 17 of these occurring on federal lands. The range of the species is restricted to the Olympic peninsula, coastal WA, and the Gifford Pinchot National Forest. Species appears to be more rare than previously thought, partly because many specimens identified as *H. burringtoni* are now considered to be *H. glandulosa*. Considerable taxonomic confusion exists between these two species and physical characteristics used for identification. Little is known about its habitat, but historic evidence indicates it is found in moist coniferous forests associated with down wood.

STATUS OF STRATEGIC SURVEYS

Strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending. A current genetic study on the Olympic National Forest is currently ongoing.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species still meets criteria for inclusion on Survey and Manage list.

2. What is the range of this species within the Northwest Forest Plan area?
3. What are the taxonomic relationships between *H. burringtoni* and *H. glandulosa*?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete analysis of CVS plots within the species range to provide information.
2. Continue genetic study (Ziegltrum and Wilke) to determine taxonomic relationship between *H. burringtoni* and *H. glandulosa*.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Complete analysis of CVS random grid surveys on the Olympic Peninsula may provide information on the habitat parameters of this species.
2. Genetic study will provide information on the taxonomy of these two species that can be used to help identify appropriate management for these two species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
2. Genetic study is a high priority.

***Hemphillia glandulosa* (E In Washington Cascades)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 140 sites within the Northwest Forest Plan area. It occurs in Washington and Oregon across four physiographic provinces: Washington Olympic Peninsula, Washington Western Lowlands, Washington Cascades, and Oregon Coast Range. This species occurs in many plant associations and seral stages and is not considered a riparian or hardwood obligate.

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species still meets criteria for inclusion on Survey and Manage list (LSOG association).
2. What is the range and distribution of this species within the southern Washington Cascades?
3. Continue genetic study (Ziegltrum and Wilke) to determine taxonomic relationship between *H. burringtoni* and *H. glandulosa*.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete analysis of CVS random grid surveys on the Olympic Peninsula may provide information on the habitat parameters of this species.
2. Genetic study will provide information on the taxonomy of these two species that can be used to help identify appropriate management for these two species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Genetic study will provide information on the taxonomy of these two species that can be used to help identify appropriate management for these two species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Genetic study is a high priority.
-

***Hemphillia malonei* (C in Washington)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 352 sites in Washington. It is also known from Oregon where it was removed from Survey and Manage. The population distribution in the WA Cascades is spottier than in the OR Cascades. Sites are documented in many vegetation zones from 300 to 4000 ft elevation. Substrates include logs and downed wood, moss, hardwood leaf litter, and under swordfern.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS plots in Oregon and Washington, known site surveys, purposive surveys on the Gifford Pinchot, and a first iteration potential habitat map using the PNV model. Results from this survey are still pending. A total of 64 known site surveys have been completed. Purposive surveys occurred on 157 acres with four new locations found. A first iteration potential habitat map for the species range has been developed using data from three known sites on the Mt Hood.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if species still meets criteria for inclusion on Survey and Manage list. (Does the reserve network provide a reasonable assurance of persistence?)
2. What is the range and distribution of this species within the southern Washington Cascades, southwest Washington, and the Olympic Peninsula?

3. What is the range of habitats this species occurs in Washington?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid surveys and analysis of data on the Gifford Pinchot and Olympic National Forests to provide information on species distribution and habitats.
2. Develop second iteration potential habitat map using known site survey data collected in 2002.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Continuing habitat modeling should provide more information on potential habitats of this species.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Developing a second iteration potential habitat map is a high priority.
-

***Hemphillia pantherina* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one historic site on the Gifford Pinchot National Forest. It has the potential to occur throughout the Cascade Range of western Washington. The type specimen was found under deep forest litter near a creek crossing. Potential habitats include under and inside of logs, forest floor litter, and in talus in moist forests and riparian areas (Terrestrial Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid surveys on CVS plots in Oregon and Washington and purposive surveys in the vicinity of the historic location on the Gifford Pinchot. Results of the random grid data are still pending. A total of 150 acres was surveyed for this species near the historic site and was not found.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the status of the only known location of this species?

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2. Determine if the species still meets the need for inclusion on Survey and Manage. (Does the species still occur in the Northwest Forest Plan area?)
3. What is the range and habitats of this species within the Northwest Forest Plan area?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete CVS mollusk surveys on the Gifford Pinchot and analysis of random grid surveys to determine if any additional locations of this species were located.
2. Revisit area where the species was previously located to determine if the species/habitat is still present.
3. Survey additional high-likely areas in the vicinity of the historic site.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Completion of the random grid survey on CVS/FIA plots will be completed in FY 2003. Information from this survey can be used to estimate species abundances, association with late-successional/old-growth habitats, and if the reserve network provides for a reasonable assurance for persistence. Efforts to re-locate the known locations should occur within the next year.

Once these surveys are completed, additional strategic surveys may or may not be necessary depending on results from these surveys and if additional strategic surveys are needed. If the historic locations are found then additional surveys may be necessary. If the species is not found from these survey efforts then strategic surveys may be considered completed according to the ROD page S&G 30 (Condition 2: The objectives of strategic surveys have been accomplished and further surveys are not likely to contribute additional significant information about distribution, relative rarity, range, habitat associations, how to conduct pre-disturbance surveys, or other strategic survey objectives.)

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Revisiting the vicinity of the known location should provide information on the status of this location.
3. Surveying additional high-likely habitats in the vicinity of the historic location may find new locations.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Conducting purposive surveys in southern Washington is a high priority.
-

Juga (Oreobasis) new sp. 2 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from four sites within the Northwest Forest Plan area with none of these occurring on federal lands. It occurs sporadically in springs in the central and eastern portions of the Columbia Gorge within the Mt. Hood National Forest and the Columbia Gorge National Scenic Area. Found in small, shallow, undisturbed perennial springs with sand-gravel-cobble substrates. (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

The only strategic survey of this species has been the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage, i.e. Does this species occur within the Northwest Forest Plan?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Survey high likely habitats on federal lands within the Northwest Forest Plan area.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Results of surveying high likely habitat on federal lands will help determine if this species occurs within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Juga (Oreobasis) new sp. 3 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from five sites within the NFP area. This species is endemic to the Upper Sacramento River system. Generally occurs in large, cold, perennial springs but also known from one site in the Sacramento River. Substrates at occupied sites range from mud and sand (rarely) to cobbles and gravel (more commonly). (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the status of historic location?
2. Determine if the species still meets the need for inclusion on Survey and Manage. (Does it occur on federal lands within the Northwest Forest Plan area?)

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit historic locations to determine status of site. Surveys may need to cover a large portion of ground based on the specificity of the location descriptions.
2. Survey high likely habitat on federal lands within the vicinity of known sites.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Results of surveying high likely habitat on federal lands will help determine if this species occurs within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Lyogyrus new sp.1 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 61 sites within the Northwest Forest Plan area, with 49 occurring on federal lands. The range is limited to Mt. Hood National Forest and both sides of the Columbia River Gorge. Distribution is scattered, being confined to high quality waters from pure spring sources.

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species includes the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending. Known site surveys occurred in 2001 but it was unclear if these surveys occurred where the species actually occurs.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage. (Do riparian reserves provide for this species?)
2. Determine habitat parameters for this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites on the Mt Hood National Forest to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.
2. Known site surveys will provide additional habitat data.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Known site surveys are a low priority.
-

Lyogyrus new sp. 2 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from one site in Fish Lake, which is partially within the Wenatchee National Forest, and one site in Curlew Lake in Ferry Co., WA. It is also known from northern and central Washington, the Idaho Panhandle, and northwestern Montana. This species is a kettle lake and riparian associate. It lives on oxygenated mud substrates with aquatic plant growth and prefers cool water. One site is on private land and one is near Forest Service land (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species includes the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending. It is most likely that this species will not be detected from this survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage.
2. What is the status of the known site within the Northwest Forest Plan area?
3. What is the habitat of this species?
4. Are any additional locations within the Northwest Forest Plan?
5. What are the surrounding land management activities and habitats/land use allocations around Fish Lake?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known site to determine if the species is still present at the location. May take more than one year of survey effort to make this determination.
2. Survey high likely habitats in the vicinity of the known site.
3. If locations of this species are found in the CVS/FIA random grid survey it will provide additional information about the species range, estimated abundance, and association with late-successional/old-growth habitats.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting the known site will determine the status of the species at this location.
2. Additional surveys in high-likely habitat will provide information if the species occurs elsewhere within the Northwest Forest Plan area.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

Lyogyrus new sp. 3 (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from one non-federal site within the Northwest Forest Plan area. It is endemic to the Pit River drainage of northern California. Found in one very large, cold spring and in a spring-fed portion of the Pit River. Individuals occur in shaded areas on the undersides of loose cobbles and boulders that are covered with an encrusting red alga. (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage. (Does this species occur on federal lands in the Northwest Forest Plan area?)
2. Do any locations or habitat occur on federally administered lands?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Acquire permission from landowner of existing site to determine status of the known location and collect habitat information.
2. Survey high likely habitats on federal lands in the vicinity of the known site.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Visiting the known location will determine the status of the population at that location and the collection of habitat parameters will help with determining where to survey on federal lands.
2. Conducting purposive surveys in nearby springs on federal lands that appear suitable habitat will be a first effort in determining if this species occurs on federal lands (thus meeting a criteria for inclusion on Survey and Manage list).

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is low priority.
-

***Megomphix hemphilli* (F South of south boundary of Lincoln, Benton, and Linn Counties, OR; A north of south boundary of Lincoln, Benton, and Linn Counties, OR)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species occurs from Olympia, WA to the Klamath Mountains in SW Oregon. This species is known from over 1000 sites throughout the species range. Most commonly found in stands with deep loose soils, old big leaf maple, rotten logs, hazel, and sword fern.

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species includes the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage in the southern portion of the species range.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete analysis of random grid surveys in this portion of the species range.
2. Revisit a sample of known sites to compare extant (locations with live individual detected) and “non-extant” sites (locations where only a dead shell was detected) to determine if the “non-extant” sites have live individuals.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Analysis of the random grid data may provide information on whether this species still meet the criteria for inclusion on the Survey and Manage list.

Appendix 7 – Mollusks

2. Re-surveying a sample of “non-extant” sites to determine if there are live animals present which will provide information if these sites should or should not be managed.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Revisiting “non-extant” sites is a high priority.
-

***Monadenia chaceana* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is endemic to northern California and southern Oregon. It is known from over 100 sites within the Northwest Forest Plan. A variety of plant associations and habitat types are used by this species. One consistent factor influencing habitat use seems to be the presence of rock or large DWM. This species does not appear to be associated with riparian areas.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid surveys on CVS plots in Oregon and Washington and the GOBIG surveys in northern California. Dunk et al. (2002) and Cutler and Edwards (2003) have completed analyses estimating abundance and association with habitat and land use allocation of these data. Results from the CVS surveys are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage.
2. Determine consistent field characteristics for preliminary field identification.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Completion of random grid survey on CVS plots in Oregon portion of range.
2. Documentation of shell characteristic values of voucher specimens (by region) to determine useful parameters for field identification.
3. Purposive surveys under a regional BLM contract are currently ongoing in northern California and southern Oregon.
4. Complete analysis of GOBIG statistical data.

LONG TERM SURVEY STRATEGY TO MEET *ROD* TIMELINES FOR CAT. B SPECIES

Additional statistical surveys that are more fine scale may be necessary to estimate species abundances. The previous statistical surveys (random grid and GOBIG) may have been too coarse to truly estimate this species abundance and

habitat associations. Once these surveys are completed strategic surveys may be considered completed, based on current identified information needs.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Ongoing and previous statistical surveys will provide information inferring about species abundance and association with LSOG habitats.
2. Purposive surveys will attempt to locate additional sites in the reserve network.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is a high priority.
-

***Monadenia infumata ochromphalus* (B)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 73 sites within the Northwest Forest Plan area. It is found only within the Klamath province in stable riparian zones within semi-dry mixed deciduous and conifer forests. Late-successional forest with high canopy closure and large down wood or rock talus is considered optimal habitat (Terrestrial Mollusk Management Recommendations October 1999). Recent taxonomic revision has combined *M. fidelis klamathica* and *M. fidelis ochromphalus* into one species.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Dunk et al. (2002) and Cutler and Edwards (2003) have completed analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage.
2. Determine if grazing impacts are the only management that may affect the persistence of this species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct surveys of association with LSOG habitat components and response to different management activities.
2. Conduct a study to determine if grazing activities affect this species.

LONG TERM SURVEY STRATEGY TO MEET ROD TIMELINES FOR CAT. B SPECIES

The identified surveys need to be initiated within the next year to answer the identified information needs. Following these surveys an assessment will be made to determine if future strategic surveys will be needed.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. These surveys will resolve insufficient information on effects of management activities.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a high priority.
-

***Monadenia fidelis minor* (E)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 61 sites within the Northwest Forest Plan area. The range is very limited, being confined to a small area in the eastern Cascades and Columbia Gorge; distribution within that range is uncertain. Found near spring habitats or dry, forested situations generally with rock substrates or large woody debris and logs for refugia.

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the random grid survey on CVS plots in Oregon and Washington and known site surveys on the Barlow Ranger District. Results from this survey are still pending. A total of 34 known site surveys were completed in 2002.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine the geographic range of the species within the Northwest Forest Plan.
2. What are the habitat requirements of this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Complete random grid survey and data analysis.
2. Develop first iteration habitat map using the PNV model showing potential habitats from known site surveys completed in 2002.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Completion and analysis of random grid survey data may provide information on habitat associations and if reserve network provides for this species.

Appendix 7 – Mollusks

2. Developing a first level potential habitat map using data collected from known site surveys can provide a first idea of potential habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
 2. Other strategic surveys are a low priority.
-

Monadenia troglodytes troglodytes (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from nine sites within the Northwest Forest Plan area. All sites were found prior to 1993 along the McCloud River Arm of Shasta Lake. It is restricted to limestone outcrops in open, brushy, and late-seral pine-oak woodland areas. Rocks and large woody debris can serve as refugia during the summer and late winter seasons. All known sites are within matrix lands (Aquatic Mollusk Management Recommendations 1998).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Because there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it was not included in their analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage, i.e. LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct a stratified random sample in LSOG and non-LSOG habitats within the known and potential range of the species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. A stratified random sample will provide information on species abundance and association with LSOG habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a low priority.
-

***Monadenia troglodytes wintu* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from eight sites within the Northwest Forest Plan area. All sites were found prior to 1993 near Shasta Lake. It is expected to exist in limestone areas to the west of the sites near Shasta Lake. Restricted to limestone outcrops in open, brushy, and late-seral pine-oak woodland areas. Rocks and large woody debris can serve as refugia during the summer and late winter seasons. Most sites are within a federal administrative withdrawal area (Aquatic Mollusk Management Recommendations 1998).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Since there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it was not included in their analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Determine if the species still meets the need for inclusion on Survey and Manage, i.e. LSOG association.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct a stratified random sample in LSOG and non-LSOG habitats within the known and potential range of the species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. A stratified random sample will provide information on species abundance and association with LSOG habitats.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a low priority.

***Oreohelix new sp.* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 54 locations within the Northwest Forest Plan area. Most of the confirmed sites are thought to be non-extant because of wildfire. Range is confined to a small portion of Chelan County, WA. Found primarily in later successional Douglas-fir/Pinegrass plant association and associated talus or rocky areas. This species has not yet been officially described in detail and only a

Appendix 7 – Mollusks

superficial description is available to compare with another species that occurs in the same area.

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species includes the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. No information needs identified that will be answered by strategic surveys.
2. A publication is needed to formally describe this (and other) mollusk species.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Strategic surveys could assist the publication by conducting surveys within the species range to collect voucher specimens.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Conduct a survey to collect voucher specimens will assist in the publication of a formal description.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is a low priority.
-

***Pristoloma articum crateris* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 90 locations within the Northwest Forest Plan area. Many of these locations have been found since 1993. It is sparsely distributed throughout the Oregon Cascades at moderate to high elevations. This species is associated with vegetation surrounding springs and seeps which are typically covered with snow for long periods of time in the winter.

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species include the random grid survey on CVS plots in Oregon and Washington and purposive surveys on the Umpqua National Forest. Results from this survey are still pending. A few locations were found while conducting purposive surveys.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the species range and distribution within the Northwest Forest Plan? Are collections from the Siskiyou National Forest and Medford BLM actually this species?
2. What is the range of habitats for this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct purposive surveys in high-likely habitat in the Oregon Cascade Range.
2. Complete random grid survey, specimen identification and data analysis.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Conducting surveys in SW Oregon for suspected locations may determine if the species range is broader than previously known.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.

***Prophysoan coeruleum* (A in WA and CA)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over 100 sites within the Northwest Forest Plan area, excluding the sites in Oregon. Occurs on both sides of the Cascades in southern Oregon and is suspected on the east slope of the Cascades in Washington. Species range extends into northern California in Siskiyou County. Closely associated with conifer forests where it is found associated with logs, ground litter, fungi, and moss. Several variants may exist. These variants have not been recorded separately from *P. coeruleum* and there are no records as to their relative abundance and exact range (Terrestrial Mollusk Management Recommendations 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California and the random grid survey on CVS plots in Washington. Since there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it is not included in their analyses of these data. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Better define the range of this species in California.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Review voucher specimens from California to verify species identification.
2. Revisit known sites in California and Washington to collect habitat data.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Conducting Known Site surveys within the California of the species range can determine if the habitat is different than in the northern portion of the species range.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a low priority.
-

***Trilobopsis roperi* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from over a 100 sites within the Northwest Forest Plan area. Most of these sites have been located since 1993. It is endemic to Shasta Co., CA. This species is expected to be found in shaded talus, rockpiles along the bank of the Shasta River, and under leaf litter and other debris in adjacent forested habitats. It is closely associated with limestone substrates (Terrestrial Mollusk Management Recommendations 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Since there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it is not included in their analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the extent of the species range within Shasta County?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct a stratified random sample of this species within the known/suspected range of the species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. A stratified random survey will help identify the extent of this species range, estimate the species abundance and habitat associations.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a low priority.
-

***Trilobopsis tehamana* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from seven locations within the Northwest Forest Plan area. All sites were found prior to 1993. It is endemic to Tehama, Butte, and Siskiyou counties, CA. Found in shaded talus, rockpiles along the banks of the Shasta River, and under leaf litter and other debris in adjacent forested habitats. Two sites are on matrix land and 4 sites are either outside the planning area or are on private land (Terrestrial Mollusk MR's 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Dunk et al. (2002) and Cutler and Edwards (2003) have completed analyses estimating abundance and association with habitat and land use allocation of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the extent of the species range in northern California?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct a stratified random sample of this species within the known/suspected range of the species.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. A stratified random survey will help identify the extent of this species range, estimate the species abundance and habitat associations.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic surveys for this species are a low priority.
-

***Vertigo new sp.* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from only one location within the Northwest Forest Plan area. It was found on non-federal land near the Soleduck Ranger District of the

Olympic National Forest. This is an arboreal species that has only been observed in riparian forests with older hardwood trees, especially alders (Terrestrial Mollusk Management Recommendations 1999).

STATUS OF STRATEGIC SURVEYS

The only strategic surveys that have occurred for this species includes the random grid survey on CVS plots in Oregon and Washington. Results from this survey are still pending.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known location in an attempt to relocate the historic location.
2. Determine if species still meets criteria for inclusion on Survey and Manage list.
3. Complete random grid survey, specimen identification and data analysis.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit location to determine status of population and quality of habitat.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
2. Other strategic survey work for this species is a low priority.

***Vespericola pressleyi* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 21 sites within the Northwest Forest Plan area. All but one site was located prior to 1993. The species range is limited to a small area in northern Trinity Co., CA. Seems to be restricted to permanently damp situations in the immediate vicinity of seeps, springs, and stable streams; individuals may move away from these areas during wet weather. This species is associated with any available cover, including decaying hardwood leaves, woody debris, and loose rocks (Terrestrial Mollusk Management Recommendations October 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Since there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it was not included in their analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the validity of the known sites?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites that do not have voucher collections to collect specimens to verify the known site.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting known sites without vouchers will provide a better understanding of species abundance and distribution.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of random grid surveys, specimen identification and data analysis is a high priority.
2. Other strategic survey work for this species is a low priority.

***Vespericola shasta* (A)**

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is known from 78 locations within the Northwest Forest Plan area. All sites are within the watershed of the upper Sacramento River in Shasta Co., CA. Inhabits damp ground at the margins of streams where it can find cover under loose rocks, woody debris, or decaying leaves. At least one site is on federal land, the remaining sites are either too poorly defined to estimate land ownership or are on non-federal land (Terrestrial Mollusk Management Recommendation October 1999).

STATUS OF STRATEGIC SURVEYS

Strategic surveys for this species include the GOBIG surveys in northern California. Since there were no detections of this species on this survey, Dunk et al. (2002) and Cutler and Edwards (2003) it was not included in their analyses of these data.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Are known sites without voucher collections actually this species?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit known sites that do not have voucher collections to collect specimens to verify the known site.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting known sites without vouchers will provide a better understanding of species abundance and distribution.

2003 STRATEGIC SURVEY PRIORITY

1. Other strategic survey work for this species is a low priority.
-

Vorticifex new sp. 1 (E)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Within the Northwest Forest Plan area, this species is known from a single site that was located prior to 1993. Found in Shasta Co., CA on private land adjoining Shasta National Forest. Occurs in a large, pristine, cold spring pool complex tributary to the Pit River. Individuals are on the surface of cobbles and boulders that are mostly covered with an encrusting red alga. (Aquatic Mollusk Management Recommendations December 1998).

STATUS OF STRATEGIC SURVEYS

No strategic surveys have been conducted for this species. GOBIG surveys in northern California did not include aquatic mollusks species in that survey.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Revisit known locations to determine if species is still present and collect information on biotic and abiotic parameters of the spring.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Revisit locations to determine status of population and quality of habitat.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Revisiting locations will provide information on status of mollusk population and quality of habitat.

Appendix 7 – Mollusks

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for this species is a low priority.
-

Appendix 8 – Vertebrates (amphibians, great gray owl, and red tree vole)

APPENDIX 8 - VERTEBRATES

Larch Mountain Salamander (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species is found within a range extending about 216 km in length, north and south along the Cascade Range, and 64 km wide, east to west. There are 128 site records, with 87 on federal lands, which occur in a clustered pattern along the Columbia River Gorge and a scattered pattern elsewhere. This animal is found in forests of variable age, composition and structure, in areas dominated by rocky substrates regardless of vegetation type, cave systems, and occasionally in or around seeps. In loamy soil habitats, late-seral vegetation appears to be an important factor in determining occupancy. Habitat for the species consists of two general descriptions: 1) talus and scree at the interface of forest and shrub plant community types); 2) pumice-derived loamy soils in ancient forests, with shrubs and interstitial rock in the soil being important characteristics.

STATUS OF STRATEGIC SURVEYS

Strategic survey work for Larch Mountain salamander is focused on developing range-wide habitat association models and associated maps.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. Can habitat models be developed for the species using known site information?
2. Can habitat models reliably predict new occurrences across the species' range?
3. What is the distribution of this species' habitat throughout its range and according to land allocation?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Compile pre-disturbance survey data sheets (both positive and negative) and gather associated site and landscape biophysical data to develop habitat models.
2. Develop habitat map(s) for the species shows high-, moderate- and low-likely habitats within the species range.
3. Assess the performance of models in predicting presence/absence (not-detected) through field sampling procedures.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Refining the description of potential habitat for this species should reduce the number of pre-disturbance surveys.
2. Map depicting distribution of habitat should aid risk assessment and habitat conservation plans.

2003 STRATEGIC SURVEY PRIORITY

1. Developing and validating a habitat model is high priority.
-

Shasta Salamander (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Shasta salamander occurs within a small area of northern California north of Redding California in the vicinity of Lake Shasta. The habitat for this species is limestone rock outcrops and the slopes surrounding these outcrops. Recently this species was found in areas not associated with these outcrops and surrounding slopes. It is unclear at this time whether locations were animals dispersing between rock outcrops or do these represent new information about habitat.

STATUS OF STRATEGIC SURVEYS

Two strategic survey efforts have been completed for Shasta salamander:

- a. Surveys were conducted in non-limestone habitat in the Green Mountain peninsula area around Lake Shasta where non-rock outcrop locations were found. Additional Shasta salamander occurrences in non-limestone habitats were found. These areas appear to represent one or more breeding populations, rather than incidental captures of dispersing individuals.
- b. Surveys were conducted to determine the northern distribution of the species, and habitat use. Shasta salamanders were found at 2 of 40 sites surveyed, in rocky non-limestone substrates, with no riparian association. The known range was extended about 16 miles to the northeast, and this site represented an increase in known elevation to 975 m.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the distribution of this species?
2. Are areas without limestone rock outcrops likely habitat for this animal?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Survey beyond the current known distribution to examine range extent.
2. Collect data to address habitat associations with rocky substrates and vegetation.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Additional surveys should provide information on distribution and habitat use.

2003 STRATEGIC SURVEY PRIORITY

1. No surveys will occur in 2003.
-

Siskiyou Salamander (D in north range, C in remainder of range)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

This species occurs only from southwestern Oregon (Jackson and Josephine Counties) and northwestern California (Siskiyou County). The number of known sites is 143 in the north range and only 30 in the south range. This species is considered a talus or rock substrate obligate and has been rarely found far from talus slopes or fissured rock outcrops. It has strong relationships with mature forest conditions, including large tree diameters and closed canopies, stable microclimates, and low degrees of disturbance.

STATUS OF STRATEGIC SURVEYS

Four strategic survey projects are ongoing, and one effort has been completed.

1. Habitat association modeling is being conducted to explore species-habitat relationships separately for north and south species ranges, using recently developed and more refined statistical tools, and incorporating habitat parameters that can be spatially mapped.
2. In the south range, random surveys stratified on federal reserved and matrix land allocations are being conducted to examine occupancy rates, habitat, and distribution. Survey results will be used to validate the south range habitat model. If time permits during the survey season, purposive surveys will explore species range boundaries to the west along Indian Creek, and south in the range of the Scott Bar population. During surveys, salamander tissue samples are being collected for genetic analyses, in collaboration with OSU cooperators, to assess species range boundaries, population differentiation, and connectivity among populations.
3. In the north range, purposive surveys are being conducted in areas identified as gaps in species distribution that would be identified as high priority sites to achieve stable well-distributed populations in the developing conservation plan. Survey results will be used to assess the north range habitat model. If time permits during the survey season, random surveys also will be conducted to provide a more statistically sound model validation with inference to the surrounding landscape. During surveys, salamander tissue samples are being collected for genetic analyses, in collaboration with OSU cooperators, to assess species range boundaries, population differentiation, and connectivity among populations.
4. Alternative methods to address risk and uncertainty are to be evaluated relative to the draft conservation plan for this species. The draft plan should be sufficiently developed by August 2003 for initiation of this project.
5. In both the north and south range, random grid surveys for salamanders were conducted at CVS/FIA plots on federal lands in 2000. No Siskiyou Mountain salamanders were detected using a mollusk-derived survey protocol at the 347 plots surveyed in Region 5 National Forests by the CA GOBIG efforts. An

additional survey effort using a salamander-specific protocol found this species at 3 of 9 plots in California, and at 4 of 6 plots in reserves in Oregon.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the full range of habitats for this species.
2. There are apparently three unique genetic lineages, occurring in distinct geographic and climatic regions. How distinct are these divisions and at what scale should species persistence be evaluated.

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Develop a north and south habitat models using spatially mappable parameters to display distribution of potential habitat within the species range.
2. Survey using a random design in the south range for distribution in reserves and managed federal lands, and nonrandomly in distribution gaps along range boundaries as time permits.
3. Survey in the north range at potential high priority sites, and randomly in habitat and nonhabitat areas to validate model as time permits.
4. Apply alternative quantitative analytical techniques to assess risk and uncertainty during decision making in the conservation planning process.
5. In cooperation with a separate OSU project, collect tissue samples during surveys for genetic analyses.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. A map showing potential habitat will show potential range of habitats for this species, for use in conservation planning in the north range, and possibly to refine pre-disturbance protocols in the south range to focus surveys in likely habitat.
2. Survey data will address rarity, distribution, habitat, and role of federal reserves for persistence in the south range.
3. Survey data will assist high priority site selection during conservation planning in the north range, and contribute to habitat model validation, also used during conservation planning efforts.
4. Analytical approaches to addressing risk and uncertainty can standardize approaches among taxa relative to these potentially vague concepts.
5. Population differentiation and connectivity data will contribute to development of management priorities for this animal.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of habitat models is a high priority.
 2. Completion of random surveys in the south is a high priority.
 3. Completion of surveys of high priority sites in the north is a high priority
 4. Initiation of risk and uncertainty analyses is a moderate priority.
 5. Collection of tissue samples for genetic analyses is a moderate priority.
-

Van Dyke's Salamander (Cascades only) (A)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Van Dyke's salamander is endemic to Washington State. It has three population centers: the Willapa Hills, and the Cascade and Olympic Mountain Ranges. In the Cascades, where it is included under Survey and Manage, it is known from 40 sites (from central Skamania County to the north slope of Mount Rainier, Pierce County). Populations at known sites appear to be small and much potential habitat appears to be unoccupied. The habitat affinities for this species are poorly understood. It appears to be strongly linked to certain habitat types (splash and spray zones, colluvial slumpages) within or adjacent to lotic systems. It is also known to occur in headwall seepages caves, lakeshores, and forest.

STATUS OF STRATEGIC SURVEYS

A total of 43 seeps and 52 streams were surveyed and measurements of biophysical habitat features were recorded. Van Dyke's salamanders were detected at 14 locations (33%) of the seeps and 25 (48%) of the streams that were surveyed in the Cascade Mountains. This information is being used to develop habitat association models for the salamander. The models and other information derived from this study are being used to guide strategic surveys for this species in several reserve areas.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What habitat features best predict Van Dyke's salamander presence?
2. What is the occupancy of the Van Dyke's salamander in several reserve areas?
3. Do the general habitat associations identified in the previous study serve as a useful tool to discover additional salamander locations?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

Surveys for occupancy will be conducted at ~ 60 sample sites distributed randomly across five large reserve areas.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

This project is intended to increase the number of known sites, which should improve our understanding of the relative rarity of this species, qualitatively assess our previous habitat relationship work, and provide additional sites for conducting detailed habitat analysis. Improved understanding of the species' frequency of occurrence in the studied reserve areas will enable a better assessment of the role of reserves in providing for the species conservation.

2003 STRATEGIC SURVEY PRIORITY

1. Completion of this habitat model is high priority.

Great Gray Owl (C)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

Prior to enactment of the Northwest Forest Plan, populations of great gray owls were known from outside (east of) the range of the NWFP in southern Oregon (Winema and Fremont National Forests), with sightings being extremely rare further west in Oregon and Washington. Since beginning surveys associated with the Northwest Forest Plan, our understanding of great gray owl distribution has increased significantly. Surveys in the 1990's have revealed a number of great gray owls (and annual breeding) in the Siskiyou Mountains of southwestern Oregon, as well as owls and nests in the Cascades, where foraging appears to be associated with young plantations, open meadows, and clear-cuts. Moreover, these owls have now been found nesting (in the Siskiyou and west-central Oregon Cascades) at elevations as low as 157 meters, belying conventional assumptions prior to surveying. Although nests are situated in mature/old growth forests, successful breeding requires juxtaposition with suitable nest sites of open foraging habitat (which varies from natural meadows through open forests with little understory to young plantations). Approximately 114 Known sites are located within the Northwest Forest Plan area, and they are considered rare and not well-distributed within this area (2001 Species Review Process, Step 2 panel notes).

STATUS OF STRATEGIC SURVEYS

Great gray owl strategic survey efforts are currently scheduled to begin in 2003.

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What are the home range characteristics and habitat use of great gray owls in the Siskiyou Mountains and in the Cascades of the Willamette National Forest? In particular, what kinds and amounts of foraging habitat are required to support a breeding pair of owls?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Radio-telemetry survey sampling 8-10 adult great gray owls (in each of two study areas) to collect information on the home range and habitat use of this species in these portions of the range.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. This survey will provide information on the home range sizes and habitat use of this species. Understanding the amounts and types of foraging habitat required for breeding will help refine the habitat conditions associated with triggering pre-disturbance surveys.

2003 STRATEGIC SURVEY PRIORITY

1. Strategic survey work for great gray owl is a high priority.
-

Red Tree Vole (D in central portion of range, C outside central range)

KNOWN INFORMATION ABOUT SPECIES/SPECIES GROUP

The Oregon red tree vole is endemic to moist coniferous forests of western Oregon and extreme northwestern California and its known and suspected range extends from the Columbia River south through western Oregon and Siskiyou Mountains, south to the Salmon and Klamath Rivers in northern California. The upper elevational limit is 6,000 feet in the Cascade Range. The habitat for the Oregon red tree vole is moist coniferous forests containing Douglas-fir, grand fir, Sitka spruce, western hemlock and white fir. Optimal habitat for the species is old-growth forests although the species occurs in younger stands (Management Recommendations for the Oregon Red Tree Vole Version 2.0 September 2000).

STATUS OF STRATEGIC SURVEYS

Strategic survey efforts for red tree vole includes a random grid survey on 400 CVS/FIA plots throughout the species range, a radio telemetry study to determine daily and seasonal activity patterns and movements, and completing several other ongoing projects. The random grid survey is approximately half way complete with an anticipated completion of spring 2004 (field surveys).

SPECIES INFORMATION NEEDS PROPOSED TO BE ANSWERED BY STRATEGIC SURVEYS

1. What is the distribution of the species within its known and suspected range?
2. What are the elevation limits of the species within the various geographic regions within the known and suspected range of the species and do these limits coincide with the distribution of various plant associations, plant communities, or plant association groups (PAG's)?
3. Does the species occur in a series of geographically and genetically distinct sub-populations that would make them more susceptible to local isolation and limit their ability to disperse across fragmented landscapes? Have past agency management actions exacerbated the possible genetic isolation of the species?
4. Is the abundance and distribution of red tree vole within the reserve network alone likely to provide for stable well-distributed populations of this species?
5. What are the key habitat and population characteristics that would assure the persistence of the species at the locations where it is known to occur? Are all sites or occurrences of this species of sufficient size and abundance to likely persist for the duration of the NFP?

STRATEGIC SURVEY METHODS AND SCALES TO ANSWER INFORMATION NEEDS

1. Conduct a random survey of CVS/FIA plots across the species range to determine distribution of the species.
2. Complete all previously funded projects and submit final reports to Survey and Manage program.
3. Complete radio telemetry project to determine extent of species home range and dispersal/connectivity questions.

BENEFITS EXPECTED TO SPECIES FROM CONDUCTING STRATEGIC SURVEYS

1. Random grid survey will estimate species abundances (using nest trees) across the species range and may provide insights on whether the reserve network provides for the species, what the upper elevation limits are (which would refine the pre-disturbance survey protocol), and provide calibration for the habitat model.
2. The radio telemetry survey will provide information about the home range and seasonal movements of red tree voles that may be used to determine if this species dispersal capabilities and possibly connectivity.

2003 STRATEGIC SURVEY PRIORITY

1. All strategic survey work for red tree voles is high priority.