United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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1792(OR-120)
OR128-EA-98-11

October 15, 2007

Dear Concerned Citizen:

Enclosed is a copy of Addendum 2 to the Revised Big Creek Analysis Area Environmental Assessment (EA OR128-98-11). It is an update and clarification of analysis related to thinning and road-management activities. Changes to the Coos Bay District Resource Management Plan since the publication of the EA require that the analysis be updated.

The following changes to the Coos Bay District Resource Management Plan have occurred since the revised EA and FONSI were completed:

- Changes in the Survey and Manage - Standards and Guides.
- Changes in the management of Port-Orford Cedar root disease.
- Changes to the Aquatic Conservation Strategy.

The addendum addresses the effects related to the changes in policy associated with commercial thinning, density management, and transportation management in four units [EA units 26, 28, 35, 36] of the revised EA's Preferred Alternative. The addendum has been reviewed by an interdisciplinary planning team and myself, and found to be consistent with the Finding of No Significant Impact (FONSI) that was completed with the EA.

The Revised Big Creek Analysis Area EA was previously made available for a thirty-day public review and comment period. The addendum has been prepared to update, enhance, and clarify information related to the site-specific effects of the proposed action in light of the policy changes affected by the amendments to the land-use plan. The addendum is narrowly focused. Due to the previous extensive public review and narrow focus of the addendum, the public review and comment period for the addenda will be fifteen days.

You are encouraged to read the addendum and comment prior to the end of the 15-day comment period, beginning October 15, 2007, and ending November 2, 2007. Comments must be received during this period to be considered for subsequent decisions. A final decision will be made after public comments have been received and evaluated.

Comments, including names and street addresses of respondents, will be available for public review at the above address during regular business hours (8:00 a.m. to 4:30 p.m.), Monday through Friday, except holidays, and may be published as part of the Environmental Assessment document or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Please direct your responses or questions to Chris Schumacher, 1300 Airport Lane, North Bend, OR 97459, call (541) 756-0100, FAX: (541) 751-4303, or e-mail to *OR_CoosBay_Mail@.blm.gov*.

Sincerely,

Paul T. Flanagan

Paul T. Flanagan
Myrtlewood Field Manager

Attachments:
Addendum #2 for the Revised Big Creek Environmental Assessment and Appendices (32pp)

Addendum #2 to the Revised Big Creek Analysis Area EA (No. OR128-98-11)

This addendum to the **Revised Big Creek EA (OR128-98-11)** is intended to enhance and clarify analysis provided in the revised EA to address changes in the Coos Bay District Resource Management Plan - Standards and Guides that have occurred since the completion of the EA and to address the expected site specific changes in the direct, indirect and cumulative effects as a result of the plan amendments. This document will amend portions of the *Affected Environment* and discussions related to the *Effects of the Action*.

Key components of this addendum include:

1. Effects related to changes in the Survey and Manage - Standards and Guides.
2. Effects related to changes in the management of Port-Orford Cedar root disease.
3. Effects related to new information regarding Northern Spotted Owl population trends.
4. Effects related to changes in conformance with the Aquatic Conservation Strategy.
5. Effects related to changes in the disturbance-distance threshold for the Marbled Murrelet.
6. The potential for cumulative effects related to other projects within the Middle Fork Coquille 5th field watershed.

The addendum will discuss the above issues as they relate to the harvest four commercial thinning units, EA Units 26, 28, 35, and 36 (and related transportation management), which are a subset of the EA's preferred alternative. The forest and transportation management activities shall be referred to as the *proposed action* henceforth. Portions of the preferred alternative have already been completed (see Table(Appdx) C-1) and the remainder of the preferred alternative is unlikely to be implemented prior to completion of the Western Oregon Plan Revision (Draft EIS completed 8/07). See additional discussion in Section 6 related to the Western Oregon Plan Amendment.

The Coos Bay District Resource Management Plan has been amended by the following:

- *FSEIS for Amendment to the Survey and Manage Protection Buffer; and other Mitigation Measures Standards and Guides* (USDA, USDI 2000) (Approved: January 2001 Record of decision [ROD]) **[S&M SEIS I]** hereafter(USDA and USDI 2001);
- *FSEIS To Remove or Modify the Survey and Manage Mitigation Measure Standards and Guides* (Approved: March 2004 Record of decision [ROD]) **[S&M SEIS II]** hereafter(USDA and USDI 2004);
- *FSEIS Supplement to the 2004 Final Supplemental Environmental Impact Statement To Remove or Modify the Survey and Manage Mitigation Measure FSEIS* (Approved July 2007 Record of decision [ROD]) **[S&M SEIS III]** hereafter(USDA and USDI 2007);
- *FSEIS Management of Port-Orford-Cedar in Southwest Oregon* (Approved: January 2004) **[POC SEIS]** hereafter(USDA and USDI 2004a);
- *FSEIS Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl* (Approved: March 2004 Record of decision [ROD]) **[ACS SEIS]** hereafter(USDA and USDI 2004b);

The following court decision has affected the S&M SEIS II:

- Order on Plaintiffs' Motion for Injunctive Relief Case 2:04-CV-00844-MJP *Northwest Ecosystem Alliance et. al. vs Mark E Rey et. al.* [part 3 as amended]

Instruction Memorandum No. *OR-2007-072* issued the current state special status species policy.

The following court orders have affected the ACS SEIS and the ACS assessment process:

- Order adopting in part, and declining in part, the report recommendation, 2:04-CV-01299-RSM, Pacific Coast Federation of Fisherman's Associations et. al. vs. National Marine Fisheries Service et. al., and American Forest Resource Council.
- *Pacific Coast Fed of Fisherman's Assn vs. National Marine Fisheries Service 265 F.3d1028*

Instruction Memorandum *No OR-2007-060* was issued in response to the two court decisions. It requires that ACS not be tied to NMFS indicators and must assess effects using site and fifth-field scales over the short and long term, a description of the important physical and biological components of the fifth field watershed, and written evidence that the decision maker considered relevant findings of watershed analysis.

The following is a list of related documents that pertain to the Proposed Action:

- *Addendum 1 of Revised Big Creek Analysis Area Environmental Assessment;*
- *Update to State Director's Special Status Species List, Instruction Memorandum No. OR-2007-072;*
- *Compliance with the Aquatic Conservation Strategy, Instruction Memorandum No OR-2007-060;*
- *Big Creek Watershed Analysis;*
- *Middle Fork Coquille Watershed Analysis;*
- *Evaluation of the Coos Bay District Resource Management Plan Relative to Four Northern Spotted Owl Reports;*
- *Biological Opinion 1-15-01-I-278;*
- *Biological Opinion 1-15-04-F-178;*
- *A Range-wide Assessment of Port-Orford Cedar on Federal Lands;*

Design Clarification

The design features stated that treatments in the Riparian Reserve would use "widely variable spacing", stating that residual tree densities would be range from 70-235 trees per acre in three of the four proposed units (Revised Appendix 1-page1). Upland portions received the same prescriptions as the riparian reserve. Approximately 76-98 trees per acre were reserved in the treated portions. Untreated portions currently range from approximately 212 to 311 trees per acre, though a number of small 0.25-acre blow-down patches have created openings in the untreated portions of the riparian reserve (especially in unit 35) since 2000. The snag and down wood treatments (4 snags and 1 downed wood tree per acre) would be used to create additional variation in tree spacing and creation of small gaps.

1.0 Effects related to changes in the Survey and Manage - Standards and Guidelines / Special Status Species

Standards or goals for the Survey and Manage program have changed several times since completion of the revised EA. Survey and Management guidelines at the time that the Big Creek EA was initiated consisted of the four-part approach described in the NFP-ROD(1994, pC-4). The 2001 SEIS modified the Survey and Management Strategy by creating a six-category system of survey and manage strategies, and removed some species from the program after annual species-status reviews. The 2004 S&M SEIS II further modified the species survey requirements and moved the Survey and Manage program into the bureau's existing Special Status Species Program. The 2007 S&M SEIS III supplemented the 2004 S&M SEIS II in order to correct deficiencies identified by the court. The 2007 ROD for the S&M SEIS III is not effective for some project types until injunctions are modified or dissolved by the court (2007-ROD p41); therefore, the 2004 S&M SEIS II and ROD, using the

Pechman exception (described below) provides the current program direction[1]. The 2004-ROD special status species designations would be used as would the 2007 Update to the State Director's Special Status Species List, Instruction Memo No. OR-2007-072 (USDI 2007).

See the attached Table 3 for species found through the proposed action survey effort and the respective changes from the NFP through to the Special Status Species Program.

In the 2004 S&M SEIS II ROD, known sites, formerly included in Survey and Manage Program, are specifically addressed as follows:

> "Known sites of Survey and Manage species not included in Special Status Species Programs will be released for other management uses after the effective date of the Record of Decision."; and "Former Survey and Manage species sites that are included in the Agencies Special Status Species Programs will have their known sites managed under Special Status Species Policies." (USDA–USDI 2004 ROD p9)

The analysis in the revised EA relied on the NFP strategy to aid in the determination of significance for the EA. By following the strategy, the analysis assumed that effects to the species across the range would not be significant (or at least within the realm of significance considered in the forest plans), even where protection of individual sites was not warranted. The analysis conducted in the supplemental planning documents (S&M SEIS I, II, III) reevaluated species as surveys were completed and new information became available. The surveys conducted in Big Creek, as part of range wide survey efforts, provided data for the reclassification.

Internal Coos Bay BLM management recommendations were developed in 2002 to determine the extent that surrounding trees contribute to maintaining micro-site conditions (USDI 2002). These management recommendations would be used to establish protection buffers surrounding special status species in the proposed action.

As previously discussed, the decision to forgo protection of known sites for many of the species was made by the 2004 ROD; therefore, the discussion to protect or not to protect non-status sites (species not on the special status species list) is beyond the scope of the project level EA. A total of 176 S&M sites were found through the survey effort in the four units. Twenty-three of the sites (all fungi) are currently listed as special status species. Protection on all but nine of the twenty-three special-status sites would be eliminated in the proposed action (see the attached map). Although none of the sites require protection under current policy, it was determined that nine of the sites could easily be protected such that they would not drastically alter the project design and layout. The potential loss of an individual site for a given species may or may not be significant and requires the context provided by larger scale analysis; it is the cumulative effects of the assumed loss of individual sites across the species range where significance must be determined. The range-wide cumulative effects of NFP policy were considered and analyzed in S&M SEIS I, II, and III, a summary of the cumulative effects can be found in the 2004 ROD (pages 9-11) and the 2007 ROD (pages 14-27).

With the publication of the 2001 S&M SEIS I-ROD, surveys for red tree voles in the project units were halted prior to survey initiation in the proposed units because surveys were no longer required; protection of known sites was required. Surveys did indicate the presence of red tree voles in EA

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[1] On January 9, 2006, the court in *Northwest Ecosystem Alliance et al v. Mark Rey et al, Civ. No. 04-844, Western District of Washington* vacated the 2004 Survey and Manage ROD, reinstating the 2001 Survey and Manage ROD. On October 11, 2006, the court modified that injunction to allow exceptions for four categories of actions. On July 25, 2007, the Under Secretary of the Department of Interior signed a new Survey and Manage Record of Decision that removed the survey and manage requirements from all of the BLM resource management plans (RMPs) within the range of the northern spotted owl. This decision may require review by the court in order to remove the injunctions associated with the 2004 ROD. In any case, this project falls within at least one of the exceptions listed in the modified October 11, 2006 injunction. The proposed action uses the "thinning in stands less than 80 years old" exception.

units where surveys were performed; surveys occurred in some of the late-successional harvest units, a confirmed incidental sighting occurred in one thinning unit (EA25) and a potential but unconfirmed site was identified near EA Unit 26 in the proposed action. Effects to red tree voles for the preferred alternative were addressed in Addendum #1. A court decision, relevant to two BLM timber sales on the Roseburg district BLM, has invalidated the red-tree-vole annual-species review. Projects not named in the suit were not enjoined by the court and this action falls under the Pechman exception. The S&M SEIS III addressed the shortcomings identified in the court decision regarding annual species review; it is still uncertain as to whether the 2007-ROD satisfies the court in this regard.

Site Scale Effects – Known Sites

Effects to individual sites are handled conservatively in the EA analysis by assuming that sites that are not protected in thinning projects would no longer remain viable, and that the site-specific buffers based on internal management recommendations would be adequate to protect the sites from the disturbance anticipated by the surrounding thinning activity. It is highly uncertain that any of the unprotected sites would persist because of the high variability associated with harvest effects at the micro-site scale. Because of this uncertainty, it must be assumed that unprotected sites would not persist. It must be noted that these sites are located within previously harvested areas that have undergone clear-cut harvest, burning, planting, and intensive silviculture over the life of the young stands. Either the species have survived in situ (especially those species with low dispersal potential), or the areas have been re-colonized from adjacent forests in fewer than sixty years. It is possible that some of the unprotected sites are resilient to disturbance and will persist locally in spite of the disturbance caused by the thinning activities. However, any attempt at assigning a survival probability to unprotected sites given the random effects at the site scale would be speculative, and the lack of certainty in anything other the assumed loss, indicates that additional analysis at the site scale might not be practical or possible. Some of sites occur outside of the treatment area and will be unaffected by the action (see map). Approximately 173 of the 410 acres of the stands that encompass the treatment areas are left untreated (42% of available acres).

Management recommendations were developed by an interdisciplinary team on the Coos Bay District in 2002 to manage and protect known sites for Survey and Manage species on Coos Bay District BLM (USDI 2002). In the case of ectomycorrhizal fungi, which includes all five special-status species found on this proposed sale, recommendations were developed to protect not only the site of fungal fruiting body, but also to protect the underground network of ectomycorrhizal mycelia associated with each fruiting body. The mycorrhizal mat is calculated as approximately three times the radius of the average Douglas-fir crown in the immediate site area. Once the mat area is calculated an additional area of trees are reserved outside of the mat area in order to protect the micro-site. This ectomyccorhizal mat is then buffered by leaving trees based on a formula developed in the SHADOW model (USDI 2002). The SHADOW model was originally developed to design riparian harvest prescriptions, to assess shade and stream temperature cumulative effects, and to assess riparian and channel enhancement opportunities. This model uses August 1 as a default date (the hottest part of the year) and determines shade distances based on latitude, tree heights, slope percentage, and aspect. The buffers are typically largest to the south, which is the where the greatest number of trees can provide shade to the site at the warmest part of the day.

Heithecker and Halpern (2007) did not find significant changes in soil moisture in contrasting environments in their study of micro-site characteristics of leave patches in clear-cut harvests; additionally, they found that soil temperature was highly variable within 15 m of edges depending on the site characteristics at the measurement site (soil temperature could be as low as the control plots or as high as the clear cut areas) and soil temperatures were comparable to control plots within 10-30 m of the edge, depending on aspect. The edge effects to leave-island micro-sites adjacent to the thinned area in the proposed action are expected to be less than those described by the study, as the

residual trees in the treatment area will provide less contrast in conditions between treated and untreated. Average canopy closures of the residual stands are expected to remain above 60%.

Local and Regional Effects –Known Sites

As previously discussed, the 2004 SEIS removed or modified mitigation measures and guidelines for all former Survey and Manage plant species. Some of these former Survey and Manage plant species were incorporated into the BLM's Oregon and Washington Special Status Species Program (SSSP) in 2004. The SSSP was updated in July of 2007. Based on this revised special-status species list, 23 of the original 176 sites contain Bureau Sensitive Species. The 23 sites contain five species of Bureau Sensitive fungi: *Phaeocollybia californica, Phaeocollybia olivacea, Phaeocollybia pseudofestiva, Phaeocollybia sipei,* and *Phaeocollybia spadicea*. The following table lists the special-status species present on the proposed sale area, in the 5th field watershed encompassing the sale area, and the total number of sites throughout the range of these species in Oregon, Washington, and California. All Bureau Sensitive species present are endemic to the range of the northern spotted owl.

Table 1 Bureau Sensitive Fungi Sites

Species	# of Known sites in Oregon, Washington, and California[1]	# of Known Sites in the Coos Bay District BLM	# of Known Site in the Middle Fork Coquille 5th Field Watershed (Primarily in the Big Creek 6th field)	# of Buffered Sites in Completed Sales in the Big Creek Analysis Area	# of Known Sites in the Proposed Action	Buffered in Proposed Action
Phaeocollybia californica	53	7	3	0 of 0	1	1
Phaeocollybia olivacea	47	24	12	0 of 0	4	2
Phaeocollybia pseudofestiva	45	19	4	0 of 0	1	0
Phaeocollybia sipei	54	29	22	2 of 2	15	6
Phaeocollybia spadicea	83	34	5	0 of 0	2	0

[1]This data is taken from the 2007 Final Supplement to the 2004 SEIS to Remove or Modify Survey and Manage Mitigation Measure Standards and Guidelines(USDA and USDI 2007). Sites on non-Federal lands are not included

Although pre-project Survey and Manage and special-status species surveys were done in 2000 & 2001 on the proposed sale area, and 23 special status sites were located, there are no NEPA requirements to address Bureau Sensitive species found prior to 31 July 2007 (USDA and USDI 2007). However, the SSSP also states that BLM be consistent with the conservation needs of the special-status species and not contribute to the need to list any special-status species. If none these historic sites (known sites found prior to 31 July 2007) of BLM Bureau Sensitive plant species were managed, and sites were altered or destroyed through management actions on multiple BLM Districts, the number of known sites could drop down to 20 or lower. Under the draft EIS for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts, conservation measures would not be applied to populations of botanical species in the conifer habitat group unless 20 or fewer populations of a species are known to exist (USDI 2007[Draft]). The cumulative effect of not managing any historic sites across Western Oregon/Washington BLM lands could lead to a drop in the number of known sites for some Bureau Sensitive species, potentially reaching below the 20-population threshold. This would trigger conservation measures by BLM to prevent contributing to the need to list a particular species. In order to minimize the impact to the fungi species on this proposed thinning sale, several, but not all, of these fungi sites would be buffered: six of the 15 *Phaeocollybia sipei* sites, two of the four *Phaeocollybia olivacea* sites, and the only *Phaeocollybia californica* site. Buffering these sites would permit these species to persist in portions of the thinning units and these areas could act as "seed" sources to repopulate the project area. Persistence of these species would ensure that our actions would not contribute to the need to

list these species. Two species with a total of three sites would not be buffered: one site of *Phaeocollybia pseudofestiva* and two sites of *Phaeocollybia spadicea*. There are currently several known sites of each species within the Middle Fork Coquille 5th Field watershed and a total of 45 known sites of *Phaeocollybia pseudofestiva* and 83 known sites of *Phaeocollybia spadicea* in the range of the northern spotted owl so it is unlikely that losing one or two known sites of each species would contribute to the need to list these species.

Of the original 176 S&M sites, 153 no longer require site management and were either removed from the Survey and Manage program during Annual Species Reviews or in the July 2007 Final Supplement to the 2004 SEIS. The following table lists these species and the rationale for removing them from Survey and Manage and not including them in the SSSP.

Table 2 List of former Survey and Manage species with known sites in the proposed action that are not included in the Special Status Species Program

Taxa Group	Species	Removed from Survey and Manage Program	Rationale for Removing (in 2007 SEIS)
Bryophytes	*Buxbaumia viridis*	2001 Annual Species Review Program	Sufficient habitat.
Fungi	*Clavariadelphus occidentalis*	2007 Final Supplement to the 2004 SEIS	Sufficient habitat.
	Craterellus tubaeformis	2001 Annual Species Review Program	Sufficient habitat.
	Gymnopilus punctifolius	2001 Annual Species Review Program	Sufficient habitat; insufficient habitat range-wide, but sufficient habitat in the portion of the range where the species is on one or more SSSP.
	Gyromita infula	2001 Annual Species Review Program	Sufficient habitat.
	Phaeocollybia attenuatta	2007 Final Supplement to the 2004 SEIS	Sufficient habitat.
	Phaeocollybia fallax	2007 Final Supplement to the 2004 SEIS	Insufficient habitat; insufficient habitat range-wide, but sufficient habitat in the portion of the range where the species is on one or more SSSP.
	Phaeocollybia kauffmanii	2007 Final Supplement to the 2004 SEIS	Sufficient habitat.
	Phaeocollybia piceae	2007 Final Supplement to the 2004 SEIS	Insufficient habitat; insufficient habitat range-wide, but sufficient habitat in the portion of the range where the species is on one or more SSSP.
	Ramaria ariospora (including all varieties)	2007 Final Supplement to the 2004 SEIS	Insufficient habitat; insufficient habitat range-wide, but sufficient habitat in the portion of the range where the species is on one or more SSSP.
	Ramaria conjunctipes var. sparsiramos	2007 Final Supplement to the 2004 SEIS	Sufficient habitat.
	Tylopilus porphyrosporus	2007 Final Supplement to the 2004 SEIS	Sufficient habitat.
Vertebrates	*Arborix longicaudus (Mesic)*	2001 Annual Species Review Program	Sufficient Habitat
Mollusks	*Prophysaon coeruleum*	2001 ROD	Sufficient Habitat
	Prophysaon dubium	2001 ROD	Sufficient Habitat
	Megomphix hemphilli	2007 Final Supplement to the 2004 SEIS	Sufficient Habitat

Other Special Status Species

The following is a discussion of Special Status species known or suspected to occur within the District but for which no surveys were conducted. Those species without clear habitat connection to the proposed action (i.e. marine mammals etc.) will be omitted from the discussion. See Appendix A for information on additional species.

To comply with Bureau policy to assess the effects of a proposed action on Bureau Sensitive and Strategic species, the District may use one or more of the following techniques: (1) evaluation of species habitat association, (2) application of conservation strategies, plans, or other conservation tools, (3) review existing survey records, inventories, and spatial data, (4) use professional research and literature, (5) use professional judgment, and (6) complete pre-project surveys. Surveys are warranted if the project is within the range of these species, if there is potential habitat within the project area, or the project may cause significant negative effect as determined by environmental analysis on the species' habitat or persistence (IM No. OR-2003-054 http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/).

Terrestrial Invertebrates

Spotted Tail-dropper, Green Sideband, and Salamander Slug (Sensitive)

Little is known about the occurrences of green sideband snails, spotted traildropper and salamander slugs on the District lands. Based on habitat preferences, it is possible that these species are present in the proposed units; however, no surveys have been conducted. These species are associated with deciduous trees and shrubs in moist conifer forest habitats. The proposed action concentrates treatments in the dense conifer areas of the stands and Big Leaf Maple greater than 7" would be reserved from harvest. If the species are present, the felling and movement of trees and alteration of microclimate could cause mortality from direct trauma or desiccation. The assumption is that individuals would not survive (see known-sties site discussion above). Average residual stand canopy cover of approximately 60% would not diminish the habitat for these species, and the treated areas would provide habitat to individuals that survived or recolonized from adjacent forests. Individuals would be expected to persist in the untreated portions of stands including stream buffers and leave islands (237 of 410 acres of the stands are being treated, 57%). The limited scale and scope of the proposed action is not likely to cause local extirpation of the species, if present, or contribute to the need to list the species under the Endangered Species Act.

Aquatic Invertebrates

Robust walker, Pacific walker, a caddisfly (Sensitive)

While habitat for these species is present in the Action area, their known occurrences are located in other watersheds and even other counties. While there is a slight possibility that these species occur within the action area, the project design features and riparian buffers would ensure their persistence on the landscape, precluding the need to list these species under the Endangered Species Act.

Vertebrates

Federally threatened and endangered species were addressed in the EA (bald eagle), are addressed separately (spotted owl and marbled murrelet sections below), or do not occur in the proposed action area (i.e. snowy plover, marine mammals etc.).

Purple Martin (Sensitive)

There are no documented purple martin nest sites within the Middle Fork Coquille Watershed although it is likely this species is present in clear-cuts with snags within the watershed. A few surveys were conducted on District lands in 2002 as part of larger regional study. New clear-cuts were targeted for the surveys. Of the 190 sites surveyed, 25 were considered potential sites and purple martin were found nesting at four sites. The proposed units do not provide habitat, therefore the proposed action is expected to have no effect on the purple martin.

The Pacific Fisher (Sensitive)

There are two known small, disjunct populations in Oregon: an indigenous population in the Siskiyou Mountains and a reintroduced population in the southern Cascades (Aubry and Lewis 2003). BLM

biologists conducted surveys for marten and fisher in the Coquille, Umpqua and N. Fork Chetco river drainages from 1994 to 1997. No martins or fishers were detected; however, few data points were taken. Protocol surveys were conducted in 2005-06 north of the analysis area in LSR 261 (T26S R10W and T27S R10W). No fishers or martens were detected. Fishers are difficult to detect due to their large home ranges, low densities, and elusive behaviors. Aubrey and Lewis (2003) caution "a lack of detection should not be considered to be a certain absence at a site". Recent fisher surveys conducted on District lands near the California border detected two fishers. There were two incidental sightings near Middle Creek (T27S R10, Section 5) and Daniels Creek (T.26S R.12, Section 10). These sightings are outside of the Watershed. Although the Middle Fork Coquille Watershed may provide some dispersal habitats, the habitat is low quality based on the overall low number of snags, down wood and fragmented late successional habitat. Fisher presence in the proposed action area is unlikely. The proposed action is not expected to have an effect on the pacific fisher.

Townsend's Big-Eared Bat (Sensitive) and **Fringed Myotis** (Sensitive)
Forest bats typically use snags and large trees with good solar exposure along stand edges. Habitat for Townsend's bats includes mainly caves and mines. Fringed myotis are associated with large (30 inch dbh) snags and trees with cavities or crevices. Cliffs, buildings, bridges, and other warm protected locations also provide habitat for fringed myotis.

No project specific bat surveys have been conducted near the proposed action. There is one known fringed bat maternity site and two Townsend's bat maternities have been observed on the District located on three bridges. There are no known Townsend's bat maternities or winter roosts in the Middle Fork Coquille watershed. These bats and their habitats are present within the watershed but not in the units. The proposed action is not expected to have an effect on either of these bat species.

Foothill Yellow-legged Frog (Sensitive)
Foothill yellow-legged frogs are found in the southwest portions of Oregon in elevations below 1,800 ft (Leonard et al. 1993). These frogs are found in sections of low-gradient streams with exposed bedrock or rock and gravel substrates (Corkran and Thoms 2006).

Once considered abundant in southwestern Oregon, it has been noted that the species is in decline. Reasons for this include habitat alteration, impacts of airborne chemicals, and/or effects of exotic species, and because recolonization abilities may be greatly restricted by local extirpation patterns (NatureServe 2007). This species has been documented throughout the District. No foothill yellow-legged frog sightings are documented in the analysis area. However, project design features have been incorporated to ensure their persistence across the landscape. These include no–harvest buffers on streams containing yellow-legged frog habitat, sediment barriers and catch basins, and seasonal restrictions. These design features were incorporated to protect all aquatic species, including fish and macroinvertebrates. Implementation of the proposed action would not contribute to the need to list this (or any of the aquatic species) under the Endangered Species Act.

Northwestern Pond Turtle (Sensitive)
Western pond turtles range from Washington to California along the coast and central valleys. Pond turtles live in most fresh to brackish water environments with abundant aquatic vegetation, basking spots, and appropriate terrestrial surroundings for nesting and over-wintering (Holland 1991).

Watercourses or ponds near the proposed action may provide marginal habitat for western pond turtles. However, steep slopes, soil substrate, and man-made barriers likely preclude use of adjacent forests for nesting. This species is documented, but rare, throughout the District. Because there is no

habitat within the treatment areas (no ponds, no basking sites, no non-forested fields nearby for nesting), the proposed action is not expected to have an effect on the Northwestern pond turtle.

Oregon Coast Coho salmon/ Oregon Coast Steelhead trout
Both of these species are present within the action area. However, project design features have been incorporated into the proposed action to prevent impacts to these sensitive fisheries species. These include 200 foot no-harvest buffers along fish-bearing stream reaches and preventing sediment delivery to the aquatic system. There would be no need to list either of these species under the Endangered Species Act with the implementation of the Proposed Action.

Fungi
Surveys for all current special status fungi species were completed during the S&M survey effort; they are addressed above.

Lichen/Bryophytes/Vascular and Non-vascular Plants
Vascular and non-vascular plant surveys and lichen and bryophyte surveys have been completed. No special status species were located on any of the units.

Table 3 Species Survey Results for the Four Units in the Proposed Action and Progression of Management Strategy Categories

Unit	Species	# of Sites Found in Proposed Action	Total Number of Known Sites[1]	Latest SSSP Categories (2007)		NFP S&M Survey Strategies*				2001 SEIS Category		2004 SEIS (SSSP)	
Taxa Group				Category (Blanks indicate not on list)	Manage Known Sites (only if found after 31 July 2007)	1	2	3	4	Category	Manage known sites	Category (Blanks indicate not on list)	Manage Known sites
26													
Fungi	Clavariadelphus occidentalis	1	89			x	x			B	Yes		
	Gymnopilus punctifolius	1	90			x	x			B	Yes		
	Gyromitra infula	1	143			x	x			B	Yes		
	Phaeocollybia attenuata	5	152			x	x			D	Yes		
	Phaeocollybia fallax	1	111			x	x			D	Yes		
	Phaeocollybia olivacea	2	47	BS	Yes	x	x			B	Yes	BS	Yes
	Phaeocollybia piceae	3	57			x	x			B	Yes		
	Phaeocollybia sipei	3	54	BS	Yes	x	x			B	Yes		
	Ramaria rubribrunnescens	1	11			x	x			B	Yes		
Mollusks	Prophysaon coeruleum (Or)	7	500-1050[2]			x	x			Off	No		NA
	Prophysaon dubium	10	300-500[2]			x	x			Off	No		NA
Vertebrates	Phenacomys longicaudus (not verified)	1	485				x			C Mesic	Yes		No
28		0											
Fungi	Craterellus tubaeformis	1	403			x	x			D	Yes		
	Phaeocollybia attenuata	3	152			x	x			D	Yes		
	Phaeocollybia fallax	1	111			x	x			D	Yes		
	Phaeocollybia piceae	4	57			x	x			B	Yes		
	Phaeocollybia pseudofestiva	1	45	BS	Yes	x	x			B	Yes		
	Phaeocollybia sipei	2	54	BS	Yes	x	x			B	Yes		
	Phaeocollybia spadicea	1	83	BS	Yes	x	x			B	Yes		
	Ramaria araiospora	1	133			x	x			B	Yes		
	Ramaria araiospora var. rubella	1	Included in *R. araiospora*			x	x			B	Yes		
	Ramaria conjunctipes var. sparsiramosa	1	19			x	x			B	Yes		
	Ramaria stuntzii	1	101			x	x			B	Yes		
Mollusks	Prophysaon coeruleum (Or)	6	500-1050[2]			x	x			Off	No		
	Prophysaon dubium	2	300-500[2]			x	x			Off	No		
35		0											
Fungi	Buxbaumia viridis	3	864			x	x			D	Yes		
	Craterellus tubaeformis	3	403			x	x			D	Yes		
	Gyromitra infula	1	143			x	x			B	Yes		
	Phaeocollybia attenuata	19	152			x	x			D	Yes		
	Phaeocollybia californica	1	53	BS	Yes	x	x			B	Yes	BS	Yes
	Phaeocollybia fallax	2	111			x	x			D	Yes		
	Phaeocollybia kauffmanii	1	115							D	Yes		
	Phaeocollybia piceae	9	57			x	x			B	Yes		

Unit	Species	# of Sites Found in Proposed Action	Total Number of Known Sites[1]	Latest SSSP Categories (2007)		NFP S&M Survey Strategies*				2001 SEIS Category		2004 SEIS (SSSP)	
Taxa Group				Category (Blanks indicate not on list)	Manage Known Sites (only if found after 31 July 2007)	1	2	3	4	Category	Manage known sites	Category (Blanks indicate not on list)	Manage Known sites
	Phaeocollybia sipei	9	54	BS	Yes	x	x			B	Yes		
	Phaeocollybia spadicea	1	83	BS	Yes	x	x			B	Yes		
	Ramaria araiospora var. rubella	1	133			x	x			B	Yes		
	Ramaria conjunctipes var. sparsiramosa	2	19			x	x			B	Yes		
	Tylopilus porphyrosporus	1	37			x	x			D	Yes		
Mollusks	Prophysaon coeruleum (Or)	27	500-1050[2]			x	x			Off	No		
	Prophysaon dubium	4	300-500[2]			x	x			Off	No		
	Megomphix hemphilli	2	1140			x	x			F	Yes		
36		0											
Fungi	Gyromitra infula	1	143			x	x			B	Yes		
	Phaeocollybia attenuata	4	152			x	x			D	Yes		
	Phaeocollybia olivacea	1	47	BS	Yes	x	x			B	Yes	BS	Yes
	Phaeocollybia sipei	4	54	BS	Yes	x	x			B	Yes		
Mollusks	Prophysaon coeruleum (Or)	17	500-1050[2]			x	x			Off	No		
	Prophysaon dubium	1	300-500[2]			x	x			Off	No		
	Megomphix hemphilli	1	1140			x	x			F	Yes		
	Total Sites	176											

[1] Numbers are from the 2007 Final Supplement to the 2004 Supplemental EIS to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines.

[2] Numbers are from 2001 Final SEIS For Amendments to the Survey and Manage Protection Buffer and other Mitigation Measures Standards and Guidelines.

2.0 Effects related to changes in the management of Port-Orford Cedar root disease

Phytophthora lateralus is a fungus that causes mortality in Port-Orford Cedar trees. It is spread primarily through water flow and transport of infected soil. EA Addendum #1 includes additional watershed scale data and analysis pertaining to Port-Orford Cedar root disease.

In response to court order to characterize cumulative effects of forest management decisions on the potential spread of Port-Orford Cedar root disease, the *FSEIS Management of Port-Orford-Cedar in Southwest Oregon* was completed in 2004.

The proposed action is located within the North Coast Risk Region, which is described in the POC-SEIS as follows**:**

> POC is distributed widely across the landscape. On average 20 percent of the area is comprised of high-risk sites. The pathogen has been present in this area for considerable time. Mapping and forest inventories indicate that about 15 percent of the area (or 75 percent of the 20 percent in high-risk sites) is infested, and most drainages are at level "*c*" on the disease progression curve [high occurrence with slow spread rate]. Most originally occurring cedars in infested high-risk sites have been killed (general estimate is 90 percent). There is chronic mortality of small cedars regenerating on high-risk sites that are infested. Low-risk sites (80 percent of the area) are little impacted (p3&4-44).

The POC-SEIS came to the following conclusion:

> The various effects sections in this SEIS support this, [the] generalization that few important functions will be at risk; they do not identify any significant adverse ecological effect in this risk region [North Coast] from any of the Alternatives (p2-43)

The revised EA used the Port-Orford Cedar Management Guidelines (1994) to establish mitigation measures for controlling *Phytophthora* spread. Mitigation measures in the EA (Section L) specific to the proposed thinning project included:

- Roadside Sanitation
- Blocking dirt spurs during the wet season and after completion
- 50 foot minimum spacing for marking of reserve POC.
- No harvest of POC in the no treatment areas within Riparian Reserve
- Washing equipment prior to entry

The POC-SEIS evaluated the various management tools and mitigation measures for managing the spread of Phytophthora across the range of Port-Orford Cedar; this included the measures described in the 1994 guidelines, which are those used in the EA project design. A risk key was developed to facilitate elucidation of risk of disease spread and the level of protection/mitigation indicated at a given locale. The relevant sections of the key and discussion of key elements as they pertain to the proposed action are as follows:

Key 1a: Are there uninfected POC within, near, or downstream of the activity area whose ecological, Tribal, or product use or function measurably contribute to meeting resource management plan objectives.

> No. Within units, POC stocking levels are so low or not present (see Table 4) that POC does not contribute measurable to management plan objectives. Because the POC within the unit is widely spaced, if an isolated tree were to become infected, it would not likely spread to additional trees. High risk areas near and down stream of the project area are already infected (EA Section L).

1b. Are there uninfected POC within, near, or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?

No. High-risk areas within, near and down-stream of the project are already infected.

1c. Is the activity within an uninfested 7th field watershed as defined by alternative 6 (FSEIS Table A12-2)?

No, the two 7th field watersheds containing the proposed units are infested. All 7th fields within the watershed are already infected. All 7th fields along the transportation route are infected.

When the answers to all three questions (1a-1c) are no, then no POC mitigation is required under the new SEIS guidelines. The SEIS and EA used the same low-risk/high-risk site classification methodology for analysis. No new mitigation measures were introduced in the SEIS that would assist with risk reduction in this project. In this case, the new information supplied by the supplemental analysis resulted in a less restrictive threshold for assessing the project level significance at the site scale.

The management strategy outlined in the SEIS is risk based, relying on indirect measures for the potential for disease spread. The POC-SEIS used the 7th field watershed as an analytical unit and emphasis was placed on limiting spread to uninfected 7th field watersheds. All 7th fields within the watershed are infected and all 7th field watersheds en route to likely utilization centers are infected (POC-SEIS Map 2). The 7th field watershed method is analogous to the road-system method used in the EA, given the two primary disease spread vectors (hydrological and vehicular). Applying the 7th field analytical method does not provide additional insight into the cumulative effects the project will have on disease spread [having all 7th fields infected (SEIS Map 2) is analogous to having the entire haul route infected (EA Section L)].

The potential disease-spread risk to individual trees within the project on low-risk sites is not cumulative to low-risk sites outside of the project or even to other trees on low risk sites within the project area. The loss of low-risk individuals due to disease spread is less than that expected from harvest activities (i.e. on low risk sites, more trees will be harvested or destroyed by logging activity, especially in the understory, than are likely to be lost through disease spread). Project design features isolate individual trees within the treatment units in order to prevent a potential infection from spreading to other trees. Low risk sites in the remainder of the watershed are unlikely to be affected because of the project design features; roadside sanitation [removal of individuals in high-risk areas] would likely reduce the risk to some low risk individuals near the haul route by creating a host free buffer zone.

The range wide effects of disease spread were considered and analyzed in the POC-SEIS while evaluating the risk key strategy. The analysis results indicate that there would not be any significant adverse ecological effect in this risk region [north coast](p2-43) by following the risk key strategy. The proposed action would continue to use the mitigation measures prescribed in the revised EA with an additional summer harvest restriction on harvest in unit 35 [limit harvest to the dry season] in order to confine activity to the period when the pathogen is least active.

Table 4 depicts the presence of POC and *P. lateralus* within the proposed action units (based on stand exam data).

Table 4 Proposed Action POC and Phytophthora presence (EA Analysis File Section L)

EA Unit	POC trees per acre in overstory	POC trees per acre in understory (Section E)	High Risk Area Phytophthora Presence (p18)	Low Risk (within unit) Area Phytophthora Presence–(source)	EA Mitigation Measures Recommended
26	0	<1	Yes	No	Yes
28	0	<1	Yes	No	Yes
35	9	7	Yes	Yes (Bough Cutting[1])	Yes
36	0	20	Yes	No	Yes

[1] Port-Orford boughs are typically used as foliage in Christmas wreaths and floral arrangements. The collection of POC boughs is currently discouraged on the Coos Bay district.

3.0 Effects related to recent trends in Northern Spotted owl populations

The BLM, FS, and USFWS conducted a coordinated review of four reports containing new information on the population status of the Northern Spotted owl. The reports indicated a greater than expected decrease in NSO populations in the northern portions of its range. In 2005, a district plan evaluation was completed in light of the new information in the reports. The evaluation concluded that the new information did not warrant amendment or revision of the RMP and that the underlying analysis in the EIS [RMP] remains adequate for the purposes of tiering NEPA analysis of Northern Spotted owl effects from proposed actions implementing the RMP (USDI 2005).

The proposed action would not alter nesting, roosting, or foraging habitat and would occur outside of designated critical habitat. All four proposed units are within 1.5 miles of a known spotted owl site center. The proposed action is not likely to adversely affect local spotted owls.

4.0 Effects related to changes in the disturbance distance threshold for Marbled Murrelet

There has been a change in the disturbance threshold distance (level of noise that would result in disruption) to nesting marbled murrelets. The disturbance distance has been changed from 440 yards to 100 yards per Biological Opinion 1-15-04-F-0178.

The analytical assumptions in the revised EA are not changed. It was assumed that no disruption to marbled murrelets would occur during the nesting season. The threshold at the time the EA was analyzed was ¼ mile. New information has indicated that logging activities do not disrupt nesting Marbled Murrelets when the activities occur beyond 100 yards. The distance threshold would be reduced accordingly.

There are several known murrelet occupied sites in vicinity of and adjacent to the proposed action. Applying daily operating restrictions per Pacific Seabird Group protocol for the units or portions of units that are within 100 yards of the occupied sites will be required during the breeding season, resulting in “may affect, but is not likely to adversely affect” for the marbled murrelet.

5.0 Effects related to changes in the Aquatic Conservation Strategy – Standards and Guides

The Big Creek Watershed Analysis was completed in 1997 and used the 1994 criteria for determining consistency with ACS objectives. In 2004, ACS SEIS was completed. The ACS SEIS was invalidated by court order (2:04-CV-01299-RSM #106) on 3/30/2007. Additionally, Pacific Coast Fed. Fisherman’s Association vs. national Marine Fisheries Service (265 F.3d 1028 – 9th Circuit) found that analysis must occur at the site scale and watershed scales and at short and long-term time scales. Pursuant to BLM-Instruction Memorandum No. OR-2007-060, ACS consistency is here re-assessed using site and fifth-field scales over the short and long term, provides a description of the important physical and biological components of the fifth field watershed, and provides written evidence that the decision maker considered relevant findings of watershed analysis.

Changes to the Aquatic Conservation Strategy are related to the analysis process, and not the effects of the action. The effects of the proposed action are the same as those previously analyzed.

The updated assessment can be found in Appendix B. The assessment of the proposed action using the updated process found the proposed action to be consistent with all nine of the ACS objectives.

6.0 Cumulative Effects

The Myrtlewood Field Office has two other projects proposed within the Middle Fork Coquille watershed (the fifth field containing the Big Creek 6th field watershed and the proposed action). The Remote Control Regeneration Harvest EA (OR128-06-06), which proposes to complete 201 acres of regeneration harvest and 1.2 miles of new road construction and the Slater Rocks EA – Commercial Thinning (OR128-07-01), which proposes to complete 1500 acres of commercial thinning and 4 miles of new road construction. The Coquille tribe has two active sales planned in the Middle Fork Coquille watershed in the Sandy Creek and Lower Rock Creek sub-watersheds. The Coquille tribe manages their land in accordance with the Coos Bay District Resource Management Plan. The Roseburg District BLM has approximately 855 acres of thinning and 2.8 miles of road construction in the Twelve Mile and Headwaters Middle Fork subwatersheds

No survey and manage species or special status have been identified in the Remote Control or Slater Rocks project areas; therefore, the effects of the removal of protection from the known sites in the proposed action will not be cumulative to other known sites in the watershed. Most known sites in the Middle Fork Coquille watershed are contained within the Big Creek subwatershed because of the survey effort for the Big Creek EA. Special-status species surveys for botanical species are ongoing in the Slater Rocks project; if any sites are found, they will be added to the list of known sites and managed accordingly (the current number of known sites would not decrease as a result of the other actions). Projects proposed by the tribe and Roseburg BLM would comply with current special status species policy.

Since the proposed action does not alter northern spotted owl nesting, roosting or foraging habitat, or Marbled Murrelet nesting habitat, the effects of the proposed action are not cumulative to the effects of habitat removal in the Remote Control and the tribe's projects in the watershed.

All new road construction for the proposed action is located outside of riparian reserves and does not cross any stream channels. Road maintenance and use activities would employ best management practices for prevention of sediment delivery to stream channels. Because all the project's proposed road construction and maintenance utilize best-management practices (RMP Appendix H) or equivalent practices, and project design criteria developed to address the potential for management-related sediment to enter streams, any possible sediment resulting from road management activities is expected to be of short duration, not repeated for a decade or more, and confined to the site/reach scale of the action area; therefore, the team has determined that the combined effects of the actions are not spatially or temporally cumulative.

Western Oregon Plan Revision

The Western Oregon Plan Revisions, although reasonably foreseeable, are still in process and subject to change based on public comments and subsequent administrative remedies. They, therefore, provide insufficient information for meaningful consideration at this time (see NAEC v. Kempthorne, 457 F.3d 969, 979-80 (9th Cir. 2006) finding it lawful to consider the cumulative effects in the later broad-scale planning analysis).

Additionally, the purpose of this current proposal is to implement the existing Coos Bay District Resource Management Plan (RMP). The EA and this addendum have been prepared to determine if any significant environmental effects of the proposal are substantially greater than what has already been analyzed in the existing RMP's programmatic EIS. The EIS associated with the current Western Oregon Plan Revision effort contains a cumulative effects analysis that incorporates these implementation actions (projected to occur under the existing plan as the "No Action" alternative and possible ongoing actions carried forward into the action alternatives), in a manner appropriate to the land use planning scale. The Western Oregon Plan Revision EIS therefore serves as the appropriate vehicle for analyzing the cumulative effects of each land use alternative's management scheme. Any potentially cumulative effects of this proposal at the programmatic level that would be relevant to the proposed plan revision will be considered in that process.

It is not the intent of the planning or NEPA processes to recalibrate all analyses of existing plan implementation actions whenever a new planning effort begins consideration of a broad array of management guidelines and alternative allocations at the programmatic scale. Analyzing the outcome of the plan revision process as a "reasonably foreseeable future action" in every implementing project of the current plan would create a circular analysis process, where the effects of revising the plan would be used to determine whether to supplement the current plan's analysis that is already being revisited in the revision effort. Rather, the plan-level EIS itself will factor in the cumulative program effects and reset the stage for analysis of subsequent plan implementation actions.

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Appendix A. Special Status Species

Table(Appdx) A-1 Terrestrial and Amphibian Special Status Species Documented (D) or Suspected (S) to occur on the Coos Bay District BLM (list does not include marine or coastal species). From the State Directors Sensitive Species List, July 2007

Common Name	Scientific Name	ISSSSP Status	Key Habitat, Presence on Coos Bay District	Expected Effects on the Species by the proposed action and Comments
Birds				
Aleutian Canada Goose (wintering)	*Branta canadensis leucopareia*	OR-SEN (D)	Coastal grass lands	None, habitat not present
American Peregrine Falcon	*Falco peregrinus anatum*	SEN (D)	Cliffs, no potential nest sites in the thinning units	None, habitat not present
Arctic Peregrine Falcon	*Falco peregrinus tundrius*	OR-SEN (D)	Generalist; Cliffs (in breeding range)	None, cliffs not present in the proposed action only an occasional winter migrant on District
Bald Eagle	*Haliaeetus leucocephalus*	SEN (D)	Late-seral forest, no known nest sites within analysis area	No suitable habitat removal
Bobolink	*Dolichonyx oryzivorus*	SEN (D)	Grassland	None, habitat not present
Dusky Canada Goose	*Branta canadensis occidentalis*	OR-SEN (S)	Open grasslands, wet meadows	None, habitat not present
Lewis' Woodpecker	*Melanerpes lewis*	OR-SEN (D)	Recently burned forest, oak/pine habitats	None, habitat not present
Marbled Murrelet	*Brachyramphus marmoratus*	FT (D)	Late-seral forest, potential occupied sites near proposed units	Not Likely to Adversely Affect, seasonal and daily operating restrictions applied. No suitable habitat removal
Northern Spotted Owl	*Strix occidentalis caurina*	FT (D)	Late-seral forest, known site center within 1.5 miles	Not Likely to Adversely Affect, no suitable habitat removal
Oregon Vesper Sparrow	*Pooecetes gramineus affinis*	SEN (D)	Grassland	None, habitat not present
Purple Martin	*Progne subis*	OR-SEN (D)	Snags in early-seral habitats	None, habitat not affected
Streaked Horned Lark	*Eremophila alpestris strigata*	SEN (D)	Open beach; open ground with short grass or scattered bushes	None, habitat not present
Trumpeter Swan	*Cygnus buccinator*	OR-SEN (S)	Marsh, wet meadows, bogs, ponds	None, habitat not present
Tule Goose	*Anser albifrons elgasi*	SEN (S)	Marshes and wetlands	None, habitat not present
Upland Sandpiper	*Bartramia longicauda*	SEN (D)	Prefers upland grassy fields	None, habitat not present
White-tailed Kite	*Elanus leucurus*	SEN (D)	Pastures, open grasslands; typically low elevations	None, habitat not present
Amphibians				
California Slender Salamander	*Batrachoseps attenuatus*	OR-SEN (D)	Late-seral forests, large down logs (especially class 3-4)	None, presence very unlikely
Foothill Yellow-legged Frog	*Rana boylii*	OR-SEN (D)	Perennial streams with rock or sand substrate.	None, habitat not affected
Mammals				

Common Name	Scientific Name	ISSSSP Status	Key Habitat, Presence on Coos Bay District	Expected Effects on the Species by the proposed action and Comments
Fringed Myotis	*Myotis thysanodes*	OR-SEN (D)	Large snags, abandoned buildings, some bridges	None, habitat not affected
Pacific Fisher	*Martes pennanti*	SEN (D)	Late-seral forests, large down logs and snags	None, habitat not affected
Townsends Big-eared Bat	*Corynorhinus townsendii*	SEN (D)	Cliff, caves (they are a cave obligate)	None, habitat not affected
Reptiles				
Northwestern Pond Turtle	*Clemmys marmorata marmorata*	SEN (D)	Lentic water (ponds, slow sections of rivers). Nests in open areas adjacent to water, can over winter in forest	None, habitat not affected
Invertebrates				
Green sideband	*Monadenia fidelis beryllica*	OR-SEN (S)	Moist conifer forests in the coast range	Unknown, habitat present
Hairy Shore Bug	*Saldula villosa*	OR-SEN (D)	Salt Marsh	None, habitat not present
Hoary Elfin Butterfly	*Incisalia polia maritima*	SEN (S)	Coastal? Always around kinnikinnick.	None, habitat not present
Insular Blue Butterfly	*Plebejus saepiolus littoralis*	OR-SEN (D)	Open areas, clover	None, habitat not present
Mardon Skipper	*Polites mardon*	SEN (S)	Grass openings with Idaho Fescue and serpentine	None, habitat not present
Salamander Slug	*Gliabates oregonius*	OR-SEN (S)	Mature conifer forest w/leaf litter	None, habitat not present
Oregon Shoulderband	*Helminthoglypta hertleini*	OR-SEN (S)	Rocky & talus substrates	None, habitat not affected
Spotted Tail-dropper	*Prophysaon vanattae pardalis*	OR-SEN (D)	Moist, mature forests w/deciduous/shrub layer. Coastal fog zone.	None, presence unlikely, habitat remains suitable
Tillamook Westernslug	*Hesperarion mariae*	OR-SEN (S)	Moist, mature forested habitats or coastal "fog" zone very near the ocean.	None, presence unlikely

Table(Appdx) A-2 Aquatic Special Status Species

Common Name	Scientific Name	Status	Species Information	Step #1 *Species Present on District lands?*	Step #2 *Habitat Present/ Accessible in Action Area*	Step #3 *Species Present in Action Area?*	Step #4 *Will the proposed Action Affect this Species?*	Step #5 *What will the Effects be in Scope and Intensity?*
Vertebrates								
Chum salmon	*Onchorhynchus keta*	OR-STR	anadromous, spawn in fresh water just above tidal influence, juveniles migrate immediately upon emergence	Yes	**NO**			
Coho salmon (OC)	*Onchorhynchus kisutch*	FPT	anadromous, spawn and rear (1.5 yr) in smaller freshwater streams before	Yes	**Yes**	**Yes**	**NO**	

Common Name	Scientific Name	Status	Species Information	Step #1 *Species Present on District lands?*	Step #2 *Habitat Present/ Accessible in Action Area*	Step #3 *Species Present in Action Area?*	Step #4 *Will the proposed Action Affect this Species?*	Step #5 *What will the Effects be in Scope and Intensity?*
			migrating to ocean					
Coho salmon (SO/NC)	*Onchorhynchus kisutch*	FT	anadromous, spawn and rear (1.5 yr) in smaller freshwater streams before migrating to ocean	Yes	**NO**			
Fall Chinook salmon (SO/NC)	*Onchorhynchus tshawytscha*	OR-STR	anadromous, spawn and rear in larger freshwater streams/estuaries (0.5 yr) before migrating to ocean	Yes	**NO**			
Steelhead (KMP)	*Onchorhynchus mykiss ssp.*	OR-STR	anadromous, spawn and rear in medium freshwater streams(0.5 yr+) before migrating to ocean	Yes	**NO**			
Steelhead (OC)	*Onchorhynchus mykiss ssp.*	OR-STR	anadromous, spawn and rear in medium freshwater streams(0.5 yr+) before migrating to ocean	Yes	**Yes**	**Yes**	**NO**	
Millicoma dace	*Rhinichthys cataractae ssp.*	OR-SEN	Coos River Basin, rubble areas in swifter waters	Yes	**NO**			
Invertebrates								
Rotund Lanx (snail)	*Lanx subrotundata*	OR-SEN	Freshwater snails found in large, turbulent water of large rivers. Confined to mainstem Rogue and Umpqua Rivers	Suspected	**NO**			
Robust walker (snail)	*Pomatiopsis binneyi*	OR-SEN	Perennial seeps, shallow mud banks and marsh seeps leading into shallow streams. Documented only in Chetco River drainage.	Suspected	Yes	Not Likely	**NO**	
Pacific walker (snail)	*Pomatiopsis californica*	OR-SEN	Wet leaf litter and vegetation near flowing or standing water in shaded areas, high humidity. Documented in the Lower Millicoma River sub-basin.	Suspected	Yes	Not Likely	**NO**	
Montane Peaclam	*Pisidium ultramontanum*	OR-SEN	Documented in Klamath county. Associated with herbaceous wetlands and Salicornia plants.	Suspected	**NO**			
Newcomb's Littorine Snail	*Algamorda newcombiana*	OR-SEN	Occurs in Salicornia marshes on the roots of this plant, coastal areas with sandy beaches and flats. North Spit – Dredge Lobe area.	Documented	**NO**			
A caddisfly	*Rhyacophila chandleri*	OR-SEN	Western Cascades habitat association, Douglas, Lane, Deschutes counties.	Suspected	Yes	Not Likely	**NO**	

Common Name	Scientific Name	Status	Species Information	Step #1 *Species Present on District lands?*	Step #2 *Habitat Present/ Accessible in Action Area*	Step #3 *Species Present in Action Area?*	Step #4 *Will the proposed Action Affect this Species?*	Step #5 *What will the Effects be in Scope and Intensity?*
			Found in freshwater habitats.					

Appendix B. ACS Consistency Assessment

Background: Aquatic Conservation Strategy Policy and Direction

There are four main components to the ACS: Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration (FEMAT 1993). A "fifth" component is the Northwest Forest Plan Standards and Guidelines (USDA and USDI 1994), which provided direction on how to implement the ACS (Reeves et al. 2006). These Standards and Guidelines were incorporated into the Draft Coos Bay District Management Plan preferred alternative, which was under development (p. A-2). With the signing of the Record of Decision for this Resource Management Plan in May of 1995, these Standards and Guidelines were superseded by the RMP Management Actions/Direction.

Riparian Reserves Component:

The interim Riparian Reserve widths were delineated on all applicable hydrologic features found within the project units.

Key Watersheds Component:

The Think Big analysis area is not located within a Key Watershed. Neither the Middle Fork Coquille River 5th field watershed nor the Big Creek 6th field sub-watershed, are designated as Key Watersheds.

Watershed Analysis Component:

Watershed Analysis for the Middle Fork Coquille River 5th (MFQR) field was completed in July 1994. Watershed Analysis for the Big Creek 6th (BC) field was completed in May 1997. These two analyses provided recommendations based on relevant findings for decision makers to consider when approving projects. Those considered for the Proposed action include:

- Ample opportunity exists in the analysis are for silvicultural manipulation of riparian areas on public land, to accelerate progression toward desired conditions. (MFQR WA, p. 17)
- In Connectivity blocks, encourage development of more complex canopies on appropriate sites (typically north and east aspects, lower slopes and riparian zones) through pre-commercial and commercial thinning prescriptions. (BC WA, p. 174)
- Low disturbance silvicultural activities (i.e. thinnings, maintenance, fertilization) could be allowed in Riparian Reserves providing appropriate buffer areas are left to protect water quality and other ACS objectives. (BC WA, p. 174)
- In riparian areas within Riparian Reserve lands, actively strive to provide down log levels within the range of natural variability for Oregon Coast Range riparian areas. (BC WA, p. 175)
- Minimize sedimentation from roads. (BC WA, p. 179)

Watershed Restoration Component:

As stated in the Coos Bay RMP, "Th[is] program's most important components are control and prevention of road-related run-off and sediment production, restoration of the condition of riparian vegetation…" (p. 8)

This project incorporates 9.2 miles of road renovation, which includes approximately 30 cross drains to be replaced with adequately sized culverts and installation of approximately 6 new culverts. Additionally, roads may be resurfaced and brushed, and there would be spot rocking across a perennial stream channel to prevent sediment delivery. All of these actions would improve hydrologic connectivity and reduce road-related sedimentation

Thinning treatments have been designed to enhance growth trajectories within the Riparian Reserves. There would be 87 Riparian Reserve acres treated under this project. Several functions of the Riparian Reserve are contingent on large trees or on wood debris delivered from large trees (FEMAT 1993). In addition, 4 trees per acre would be girdled to create immediate snag habitat, and 1 tree per acre would be felled to create immediate down log habitat within the Riparian Reserves. The creation of these structures would enable the treated portions of the Riparian Reserve to provide the additional functions of greater connectivity of late-successional habitat and benefiting species dependant on the transition zone between upslope and riparian areas, as intended by the Northwest Forest Plan (USDA and USDI 1994).

Resource Management Plan: Management Actions/Direction as pertains to the ACS objectives:

Riparian Reserves Management Direction

Under Roads Management there are many Management Actions/Directions. The following are just a brief listing from Page 13:

For each existing or planned road, meet Aquatic Conservation Strategy Objectives by:

- Minimizing road and landing locations in Riparian Reserves
- Preparing road design criteria, elements, and standards that govern construction and reconstruction
- Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow
- Reconstructing roads and associated drainage features that pose a substantial risk
- Closing and stabilizing roads based on ongoing potential effects to the ACS objectives and considering short-term and long-term transportation needs.

No new road construction would occur within Riparian Reserves. New road construction would implement proper design techniques. All new roads would be semi-permanent or temporary, and decommissioned or fully decommissioned upon completion of the project. Road renovation to repair hydrologic conditions would also be implemented.

Timber Management Direction

Apply silvicultural practices for Riparian Reserves to control stocking, re-establish and manage stands, and acquire desired vegetation characteristics needed to maintain ACS objectives…

Within the Riparian Reserve, variable width no-harvest buffers would be maintained for bank stability where needed and four intermittent streams with stable banks would be thinned through. Trees would be directionally felled away from stream channels. Full suspension across stream channels and banks would be maintained during yarding activities.

Description of the Existing Watershed Condition

The existing condition, including important physical and biological components of the Middle Fork Coquille River 5th field watershed is:

- The BLM administers 63,065 out of 197,607 acres within this watershed. This equates to 32% of the land base.
- Approximately 27,373 acres or 43.4% of BLM land are in the interim Riparian Reserves.
- 36% of the trees within Riparian Reserves are aged 0-40 years.
- A large wildfire occurred in 1868, particularly in the Big Creek watershed. As there are very few trees that survived this stand-replacement event, there is a low amount of late-successional habitat characteristics within the Riparian Reserves.
- The BLM controls approximately 385 miles of road. This equates to 31% of all road miles within the watershed.

- There are 278 fish bearing stream miles within the watershed. Several long standing barriers limit anadromous salmonids to 79.7 miles of this total, or 27% of available fish bearing stream miles.

The net effects of the Proposed Action on existing aquatic conditions are:

- Thinning would result in lower density stands that would allow growth trajectories that would produce larger and more complex structure for streams and associated biota sooner than would be possible if the stands were left untreated.
- Road renovation would correct drainage problems and reduce or eliminate road related erosion and sediment delivery to stream channels.

The Proposed Action Consistency with Aquatic Conservation Strategy Objectives

ACS Objective 1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.

Site Scale Analysis

Short Term

There would be no effect to large wood delivery to streams. While trees would be removed from the Riparian Reserves, the current size of trees within the project ranges from 10 – 15 inches DBH. The minimum DBH for large wood is 20 and reducing competition would allow for the remaining trees to reach this much sooner than if left alone.

Anderson and co-authors found that with buffers 15 m or greater, the daily maximum air temperature above stream center was less than 1°C greater (Anderson et al. 2007). A temperature change of less than 1°C is well within the range of diurnal temperature change within a single day and within the range of day-to-day temperature variation. This complements work that found the greatest change in microclimate occurs between stream center and 15 m regardless of buffer size or upland treatment (Chan et al. 2004). As most of the stream channels have no-harvest buffers 25 feet and greater (most 50-100 feet), changes to microclimates within the project area would remain unchanged or unrecognizable from the natural range of variability. The four intermittent streams that would have thin through prescriptions were chosen because of slope aspect and small length of streams. Any microclimate change would not be detectible and would dissipate as crown closure increases among the residual trees.

Recently, in an experiment analyzing macroinvertebrate assemblage in headwater streams in response to harvest treatments, Danehy and co-authors found that there was little harvest effect on instream flora and fauna due to thinning (Danehy et al. 2007). Additionally, priphyton biomass was larger in thinned stands than in mature stands, but macroinvertebrate assemblage, biotic metrics, functional feeding group composition, or biomass measures were the same in both mature and thinned riparian stands. The authors suggest that "changes in abiotic and biotic features of these systems are less dramatic with the retention of trees near the channel." With the retention of variable streamside buffers and minimal thin-through areas, there would be no impacts to the aforementioned biota at the project scale.

There would also be an effect to some members of the riparian aquatic community from harvest activities. Rundio and Olson found that while they did document decreases in terrestrial salamander capture post-thinning in the Coast Range site of their project, they were not eliminated from the thinned area (Rundio and Olson 2007). Terrestrial salamanders seemed to fare better with larger amounts of down wood remaining during harvest activities within thinned sites. A project design feature is to maintain as much of current down wood levels within the units as is feasible, so the short-term effect to terrestrial salamanders is reduced. In a similar study, while the end result is still suggested as a hypothesis by the authors,

moderate upslope thinning with riparian buffers seemed to have attained the aquatic vertebrate community along channels among study sites in the first 2 years post-treatment (Olson and Rugger 2007).

Long Term

By accelerating the growth of residual trees, large wood would be recruited by the stream channels quicker than the current baseline condition.

As canopy expansion and closure is evident five years after thinning (Chan et al. 2004), riparian microclimate conditions and macroinvertebrate assemblages would return to pre harvest conditions within 5-10 years.

By providing for down wood within the project area post-thinning, and ensuring a future supply of large down wood, the persistence of terrestrial salamanders on the landscape would be maintained at the site scale over the long term.

Fifth Field Analysis

Short Term

While there would be minor impacts to mollusks and amphibians at the site scale, the relatively small size of the project would have no effect to the riparian aquatic community as a whole at the 5th field scale. This project would treat 87 acres out of approximately 6,300 Riparian Reserve designated acres within the Middle Fork Coquille 5th field watershed.

Long Term

Moving relatively homogenous forests into the understory re-initiation stage of stand development sooner would result in greater vegetative species diversity, multi-canopy structure, and larger tree size with subsequently larger snags and down wood. Many of the stream channels in the project area are capable of delivering this large wood through wind throw and debris torrents.

ACS Objective 2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependant species.

Site Scale Analysis

Short Term

There would be no effect to floodplains or wetlands as a result of this project as these areas would be fully protected by a 45 meter buffer measured, which extends out from the edge of the floodplains and wetlands. Upslope areas would have some disturbance from the nature of harvest activities, but this disturbance would be limited to the duration of the project and recovery for affected associated species would begin within one year of the project completion, which is one of the goals of the project.

Long Term

Maintaining the Riparian Reserve network would ensure the effectiveness of the Aquatic Conservation Strategy at the site scale. The stand enhancement activities of this project would ensure the long-term health and function of these Reserves by advancing the stands to become structurally complex.

Fifth Field Analysis

Short/Long Term

At this scale, due to the small amount of Riparian Reserves to be treated by this project, the effect of this project to this Objective would be minimally realized. Floodplains and wetlands are primarily located on

private lands. There are no known culvert barriers to aquatic species. Connectivity with other lands would be dictated by the Oregon Forest Practices Act across the other half of the watershed. At the landscape scale, taking into consideration the small size of the project (87 acres out of approximaely 6,300) within the Riparian Reserves, benefits from thinning would not be distinguishable.

ACS Objective 3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

Site Scale Analysis

Short Term

Project Design Features, such as seasonal restrictions and no-harvest buffers, would ensure no damage to stream bank stability. Riparian Reserve buffers are intended to function as stream protection buffers to avoid adverse impacts to aquatic resources from harvest activities. These buffers would assist in maintaining riparian integrity that includes vegetation composition, shading, and bank stability. The no-harvest riparian buffers of a minimum of 25 feet in addition to intact Riparian Reserves width should be sufficient to protect stream banks from sediment delivery resulting from project harvest activities (FEMAT 1993).

On the four intermittent streams which would be thinned through, additional project design features include full suspension of logs over the stream channel and banks to prevent erosion. At this scale, the short term integrity of the aquatic system would be maintained.

Long Term

Development of large wood structure would increase the potential for these to be delivered to stream channels. Large structure in stream channels retains gravels and sediment, and provides high quality habitat for an array of aquatic dependant species. Thus there would be restoration of the integrity of the aquatic system at the site scale in the long term.

Fifth Field Analysis

Short/Long Term

Due to the small amount of Riparian Reserves treated by the project, there would be no effect at the watershed scale.

ACS Objective 4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Site Scale Analysis

Short Term

Project Design Features were included in this project specifically to maintain water quality. For winter haul on gravel roads, sediment filters and barriers would be placed in ditchlines to intercept potential sediment delivery. In the dry season, any sediment trapped behind these features would be removed and transported off-site to a location with no delivery mechanism to stream channels.

On the four intermittent streams with a thin through prescription, full suspension is required to protect stream channels and banks from erosion. Concerning thinning adjacent to these stream channels, the hydrology section states “there should be no effect on temperature from the reduction of crown area along channels, since treatment areas are along intermittent channels that do not provide flow during the critical summer heating period.” (EA, amendment to section M, p.2)

All equipment to be used on site is required to have a chemical spill emergency kit to prevent contamination from accidental spills. There is no anticipated chemical effect to water quality.

Long Term

In the long term there would be an anticipated incremental increase to water quality from the increased growth of riparian trees, which would more quickly contribute down wood to stream channels. Down wood has long been associated with improved waters quality conditions. However, it is likely that due to the small amount of treatment within the Riparian Reserves, that this benefit would not be detectible due to the range of natural variability.

Fifth Field Analysis

Short/Long Term

As there would be no effects (positive/negative) at the site scale, there would be no effects at the larger 5th field scale.

ACS Objective 5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Site Scale Analysis

Short Term

Project analysis shows there would be no expected sediment delivery from harvest activities given the comprehensive design features for sediment control. Some of these include directionally falling trees away from Riparian Reserves, requiring full suspension over stream channels and banks, road-related upgrades, sediment filter placement along ditchlines associated with winter hauls, and suspension of winter haul under periods of heavy rainfall.

Long Term

Large trees that fall into streams have been found to retain sediment (Montgomery et al. 2003). By thinning within the Riparian Reserves, these larger trees would be available to contribute to stream channels as large woody debris sooner than if left un-thinned. Thus, the ability to retain sediment would also happen at an earlier time (in terms of decades).

Fifth Field Analysis

Short/Long Term

Given the relatively small size of the project, especially treatments within Riparian Reserves, benefits from reducing sediment input from roads and the sediment storage capacity from enhancing large wood in streams would be indistinguishable at the landscape scale.

ACS Objective 6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetlands habitats to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

Site Scale Analysis

Short/Long Term

For the Big Creek area, 1800 feet in elevation begins the rain-on-snow zone, a zone with the potential for increasing peak flows during periods of high precipitation, moderate temperatures and wind. None of the Think Big units are located in this zone, thus impacts to peak flows from rain-on-snow events would not occur.

Additionally, channel function/hydrologic conditions are not expected to change upon implementation of project activities. The following explanation is taken from the revised Hydrology section:

[I]t is concluded that the proposed activity would not change the current channel types to any significant extent. Factors include: 1) Pattern of Riparian Reserve protection buffers, 2) Slight increases in flow from forest management activities (early fall or spring) do not have flow volumes sufficient to cause significant shear stress to degrade channels, 3) Eighty percent of all stream channel are small, headwater channel types, being moderate steep (>4%) and rapidly transport water through them, 4) The channel forming floods that can change channel boundaries are infrequent and do not depend on forest management differences in evapotranspiration in rain dominated watersheds such as this one…

As a result, there would be no changes to in-stream flows with the implementation of the Proposed action.

Fifth Field Analysis

Short/Long Term

As there would be no impacts to in-stream flows at the site scale, there would be no changes at the 5th field scale.

ACS Objective 7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

Site Scale Analysis

Short/Long Term

There are no meadows within the project and the few wet areas discovered on field inspections have been buffered out of the units. Therefore these areas would retain their water table elevations. The project does not include water diversions or well drilling, which are activities usually associated with lowering water tables.

Fifth Field Analysis

Short/Long Term

As there are no effects to floodplain inundation and water tables at the site scale, there would be none at the 5th field scale.

ACS Objective 8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Site Scale Analysis

Short Term

The project proposes to thin conifers and hardwoods to promote growth within streamside stands. To accomplish this along stream channels, trees would be directionally felled away from riparian areas. Yarding over streams and stream banks would require full suspension to prevent potential erosion. Current coarse wood within the units would be avoided where possible and left on site. Also snags and down wood creation are included among the project design features for Riparian Reserves.

In their literature review to support increased biodiversity, the authors compiled the following discussion of the benefits of thinning to understory plant species:

Thinning opens up the stand and allows light to reach the forest floor. This provides for better developed understories with greater richness, diversity, and cover (Bailey et al. 1998, Curtis et al. 1997, Thomas et al. 1999, Thysell and Carey 2000). Studies have found that thinned stands have greater

herbaceous cover (Carey and Wilson 2001, Muir et al. 2002), greater understory trees and shrubs (Bailey and Tappeiner 1998, Muir et al. 2002, Tappeiner and Zasada 1993), and greater density, survival, and growth of conifer seedlings (Bailey and Tappeiner 1998, Brandeis et al. 2001, DeBell et al. 1997, Muir et al. 2002) (Zobrist and Hinckley 2005).

Additionally, even though cover was initially reduced in response to thinning, the end result was a positive effect to understory vegetation and diversity within sample sites in the Oregon Coast Range (Chan et al. 2006).

With the implementation of project design features to prevent sediment delivery and the enhanced growth of the understory layer, this project would have a small restorative aspect to this objective at the site scale.

Long Term

By enhancing the development of late-successional characteristics within stream-side stands, the Proposed action would restore this Objective at the site scale over the long term.

Fifth Field Analysis

Short/Long Term

Given the relatively small size of the project, especially treatments within Riparian Reserves, benefits would be indistinguishable at the landscape scale.

ACS Objective 9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.

Site Scale Analysis

Short Term

No-harvest buffers would provide areas of undisturbed litter layers, structures and vegetation, and protected microclimates that would provide refugia areas for riparian-dependant plants and animals present on the sites at the time of treatment.

In addition to the species discussed under ACS Objective 1, other researchers have found that "the short-term consequences of thinning for most bird species evaluated in this study are positive, neutral, or of minor negative impact" (Hayes et al. 2003).

Long Term

Thinning would provide conditions favorable for the development of diversified layers of herbs and shrubs and pockets of shade tolerant trees. This would result in a more diversified array of microclimates, structures, and substrates, and by that, provide additional habitats that can support increased numbers of riparian-dependent species of both plants and animals.

Fifth Field Analysis

Short/Long Term

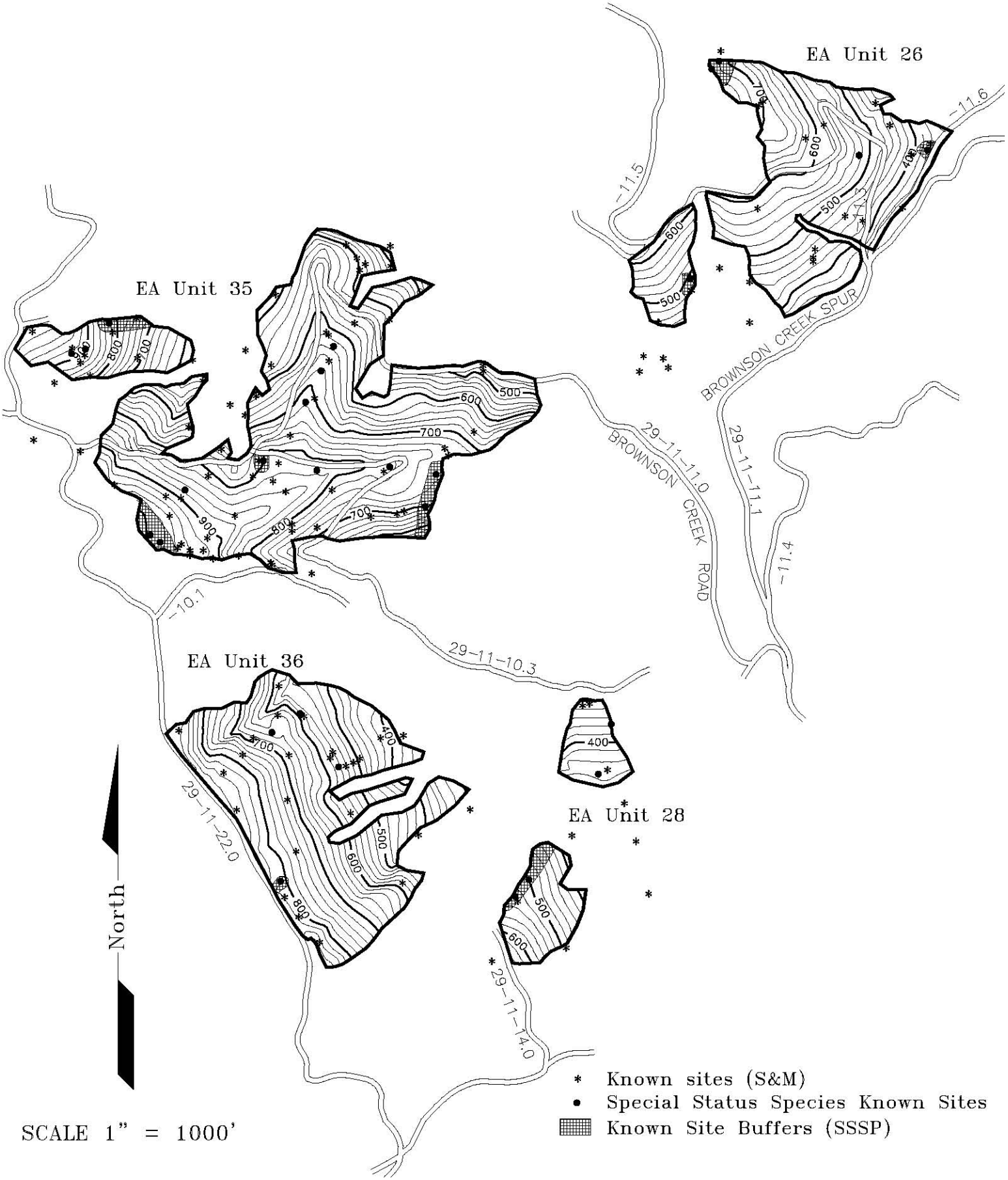
Given the relatively small size of the project, especially treatments within Riparian Reserves, benefits of this project would be indistinguishable at the landscape scale. Long-term benefits, discernable at the 5th field, would be contingent on the additive effect of multiple restoration projects implemented across the watershed over time.

Appendix C. Revised Big Creek EA Preferred Alternative Completion

The following table shows the implementation status of the Big Creek EA's preferred alternative and the deviation from the planned versus actual activity.

Table(Appdx) C-1 Treatment Summary for Alternative II from the Revised Big Creek EA

EA Unit	Treatment	EA Acres (GIS)	Actual Acres (Timber Sale Acres)	Riparian Treatment (Timber Sale Acres)	Planned New Road Construction (Feet)	Actual New Road Construction (Feet)
Proposed Action						
26	CT	51	55	25	1200	1560
28	CT	14	16	6	0	0
35	CT	98	111	37	1250	1100
36	CT	52	62	19	0	0
Completed Units		0	0	0	0	0
9	Regen	31	13	0	300	300
11	Regen	27	20	0	250	350
19	Regen	16	7	0	0	0
20	Regen	14	13	0	850	850
25	CT	18	14	2	250	250
32	CT	12	9	2	0	0
36DM	DMT	11	8	1	0	0
40	HWC	3	5	0	0	0
Units where treatment is unlikely		0	0	0	0	0
3	Regen	42	0	0	0	0
4	Regen	25	0	0	1200	0
5	Regen	22	0	0	500	0
6	Regen	18	0	0	900	0
7	Regen	13	0	0	0	0
8	Regen	47	0	0	200	0
10	Regen	13	0	0	400	0
27	Regen	17	0	0	1350	0
29	Regen	22	0	0	500	0
A	Brush Conv	6	0	0	0	0
30	Regen	15	0	0	400	0
Totals		587	333	92	9550	4410
Deviation from Planned Activity		-254			-5140	

Big Creek EA - OR128-98-11
Big Creek Addendum 2
T. 29 S., R. 11 W., Secs. 2,10,11&15 Will. Mer.

Special Status Species
and Known Sites