

## APPENDIX A

### DICHOTOMOUS KEY IN DETERMINING LEVEL OF SURVEY

- 1a. A Known Site of *Bridgeoporus nobilissimus* exists within the proposed project area or the project area is within a *B. nobilissimus* Management Area. Conduct complete surveys in all potential habitats within the proposed project area to determine the size of the population or to detect new sites.
- 1b. No Known Site of *B. nobilissimus* exists within the proposed project area and the proposed project is not within a *B. nobilissimus* Management Area. Go to 2.
- 2a. A Known Site of *B. nobilissimus* exists within the immediate vicinity (within the same fifth field watershed) of the proposed project area. Conduct intuitive controlled or complete surveys in all potential habitats within the proposed project area to detect new sites. Complete surveys are appropriate for proposed project areas less than two and a half acres in size.
- 2b. No Known Site of *B. nobilissimus* has been reported to occur within the immediate vicinity (within the same fifth field watershed) of the proposed project area. Go to 3.
- 3a. The proposed project area is within the geographic range of occurrence of *B. nobilissimus*. Go to 4.
- 3b. The proposed project area does not occur within the geographic range of occurrence for *B. nobilissimus*. A survey is not warranted. Document method of determination.
- 4a. Prefield review determines that suitable habitat for *B. nobilissimus* exists within the proposed project area. Conduct intuitive controlled or complete surveys in all potential habitats within the proposed project area to detect new sites. Complete surveys are appropriate for proposed project areas less than two and a half acres in size.
- 4b. Prefield review determines that suitable habitat for *B. nobilissimus* does not exist within the proposed project area. A survey is not warranted. Document method of determination.

## **APPENDIX B**

### **INTUITIVE CONTROLLED SURVEY AND SPATIAL DOCUMENTATION**

#### Intuitive Controlled Survey

Intuitive controlled surveys are intensive searches in those portions of the project area with the highest potential for locating the target species. The surveyor walks through the project area enough to see a representative cross-section of all the major habitat types and environmental conditions, looking for the target species while en route between different areas. When the surveyor arrives at an area of potential habitat (that was predetermined in the pre-field review or encountered during the field visit), an intensive search should be made within the potential habitat areas (figure 3).

#### Spatial Documentation of Extent of Survey

To facilitate accurate information transfer into a GIS system, spatial documentation of the area surveyed should be precisely recorded as shown below. Designate plot locations where taxon encountered with an + and corresponding plot number.

**APPENDIX C**

**FUNGI SURVEY STRATEGY 2 FIELD SITE FORM**

**Genus/species:** \_\_\_\_\_

**Location Name:** \_\_\_\_\_

**Land Ownership:** BLM USFS Other: \_\_\_\_\_

Forest and District: \_\_\_\_\_

BLM District and Resource Area: \_\_\_\_\_

Land Allocation: \_\_\_\_\_

**State:** \_\_\_ **Co.:** \_\_\_\_\_ **Quad name (7.5 min. or 15min.):** \_\_\_\_\_

**Specific Location: (within 150 ft. )** Attach map

**Lat:** Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec. \_\_\_\_\_ **Long:** Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec. \_\_\_\_\_ **Elev:** \_\_\_\_\_

**T:** \_\_\_\_\_ **R:** \_\_\_\_\_ **Section** \_\_\_\_\_ **1/4 of** \_\_\_\_\_ **1/4**

**Habitat** (dominant trees, shrubs, plants, plant associations): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Circle the appropriate categories**

**Substrate:** mineral soil litter humus duff wood (add detail below) moss insect mushroom other:

\_\_\_\_\_

**Substrate Tree species:** \_\_\_\_\_

**Location on Wood:**

base trunk branches roots stump snag recently fallen log rotten log decay class: \_\_\_\_\_

up-rooted root wad litter fall Other: \_\_\_\_\_

**Topography:** ridge slope valley along a trail along roadside (road bank to bank)

Other: \_\_\_\_\_ Aspect (degrees): \_\_\_\_\_

**Collector's name/number:** \_\_\_\_\_ **Date :** \_\_\_\_\_

**Photo taken of habitat?** Yes No **of specimen?** Yes No

**New Occurrence?** Yes No

**Revisit?** Yes No **Species found?** Yes No

**Other descriptive notes taken (attach to sheet)?** Yes No

## APPENDIX D

### FIELD FORMS FOR SURVEY AND MANAGE FUNGAL SPECIES

#### Key to the Mycological Survey and Manage form (July, 1997)

1. What species is this a potential for: include code and species name
2. Crew: List all crew members present for survey.
3. Type of survey: fill in how you happened to be here-- at this point, mostly for Habitat Surveying
4. Survey date: The date the survey was performed
5. Ownership: Circle or write in the name of the agency who manages the land.
6. Location: Geographical area or landmark (mountain name, watershed, trail name, etc.)
7. Land locally administered by: Name the agency who is directly involved in the lands management (i.e. local ranger district or resource area)
8. Directions: give accurate directions to the plot center via easily identifiable landmarks County, State, Legal (township, range, section, quarter section, and sixteenth section)
9. Map/Quad: Name of map and scale
10. Aerial Photograph: Number and date of photo
11. Latitude and longitude: Retrieve this via quad maps
12. Plot ID: Write a descriptive name utilizing a nearby geographic landmark. (i.e., Mary's Peak plot 1, etc.)
13. % slope: Obtained through clinometer reading by standing at plot center. Take one measurement uphill and one downhill. Record the average
14. Elevation: Approximate elevation via map quad, and clinometer reading. Elevation is recorded in feet.
15. Aspect: Recorded in degrees
16. Plot size: 400 m<sup>2</sup> is standard at this point
17. Macpos: Macroposition = Position on landform on very broad scale. Should reflect topographic moisture drainage at the largest scale.

1= ridgetop	4= lower slope
2= upperslope	5= bottom
3= mid-slope	6= plain
18. Micpos: Microposition = position on secondary landform feature usually within site of plot.

1= ridgetop	4= lower third	7= river bottom
2= upper third	5= bench/flat	8= edge of or in basin or wetland
3= mid third	6= toe of slope	9= draw, intermittent stream bottom
19. Micro V/ Micro H: Microconfiguration Vert/Horiz = Shape of landform in immediate vicinity of plot.

1= convex	3= straight
2= concave	4= undulating
20. Topographic Moisture (redistribution of water by gravity):
  1. extremely dry: Top of ridge
  2. very dry: just below the ridge top
  3. dry, well-drained: steep slope
  4. dry mesic: the area in-between top of slope and midslope
  5. mesic: midslope (you can visualize mesic as being the top of a bell curve, with extremely dry and standing water on either side of the curve)
  6. moist mesic: water starts to accumulate, lower slope
  7. moist, well-watered: water present for significant part of the growing season
  8. wet: water table near the surface for most of the year (bog, etc.)
  9. standing water: permanent water table (lake)
21. Soil type: library question, to be researched before or after survey

22. Regolith (parent material):
1. erosional colluvium: Upperslope, with the material fractured and moving by gravity (moving out)
  2. neutral colluvium: Midslope, with the material fractured and moving by gravity (moving in & out)
  3. depositional colluvium: Bottomslope, with the material fractured & moving by gravity (moving in)
  4. alpine glacial: Infrequent, unsorted material, and high elevation
  5. continental glacial: Unsorted material (many different sizes mixed together)
  6. glacial-fluvial: River deposition
  7. volcanic: General mix of volcanic materials (ash and larger components)
  8. tephra: Ash (pumice), sharp angular particles
  9. pyroclastic: Materials such as pumice stones
  10. residual: Ridgetop, rock weathering in place
  11. organic: Bog, etc.
  12. talus: Associated with colluvial fans, larger rock than scree
  13. alluvium: Deposited by stream
  14. lacustrine: Deposited by lake, fine sediments
23. Bedrock:
- |                |              |                  |                |             |
|----------------|--------------|------------------|----------------|-------------|
| 1. granite     | 5. rhyolite  | 9. shale         | 13. schist     | 17. unknown |
| 2. andesite    | 6. pumice    | 10. sandstone    | 14. gneiss     |             |
| 3. basalt      | 7. limestone | 11. conglomerate | 15. serpentine |             |
| 4. pyroclastic | 8. mixed     | 12. slate        | 16. greenstone |             |
24. Landform:
- 1 = Glacial cirque: a semi-circular basin formed by old glaciers
  - 2 = glacial sideslope: side of glacial carved valley
  - 3 = glacial valley: valley carved by glacier
  - 4 = glacial moraine: a rounded ridge, hill or mound of rubble left behind by a retreating glacier
  - 5 = cliffs: sheer or nearly so face of rock
  - 6 = colluvial (talus, scree, etc.) Rock deposits formed by the force of gravity
  - 7 = talus slope: an accumulation of unconsolidated rock associated with a sloping upland area; a cone-shaped accumulation of angular rock fragments
  - 8 = scree: similar to talus, yet finer in size.
  - 9 = alluvium: unconsolidated sediment deposited by a stream
  - 10 = alluvial fan: fan-shaped deposit of sediment formed when a stream's slope is abruptly reduced
  - 11 = alluvial terrace: broad level plain that lies above the current floodplain
  - 12 = alluvial valley: stream carved, V shaped valley
  - 13 = mudflow: debris flow from intense water flow usually in canyon or ravine dry mountainous area
  - 14 = colluvial fan: Rock deposited by gravity, falling rock spreading from steep slope to level valley area creating fan shaped deposits
  - 15 = colluvial- fluvial fan: Same as above, additionally influenced by hydrological activity
  - 16 = mountain slope: mountain side
25. Land Use/Threat/Allocation: i.e. recreation, wilderness, nearby roads, allocation (planned management for the area)
26. Habitat description/threat/allocation: description of plot (see form)
27. Tree species: List all tree species. For each species, record percent cover by class in each diameter size class: < 1 meter in height, < 10 cm DBH, 11-30 cm DBH, 31-100cm DBH, and 100cm+ DBH. Total percentage cover is to be determined by...
28. Dead Trees/Snags: Record the number of snags in the three size classes provided. < 10 cm DBH, 10-30 cm DBH, 31-100cm DBH, and 100cm+ DBH.
29. Herbs, Graminoids, Shrub Species: When all species are added together, the cover may exceed 100%. List all herb, grass and shrub species. Focus on dominant species and indicator plant species. Divide plot into quarters and estimate the percent coverage of each quarter for each species. Calculate an average cover for each species and write in Total % Cover.

30. Other coverage measurements: Calculate the percent coverage of each item with the same technique as herbs, graminoids, shrub species.
- Rock : gravel and rock
  - Cryptogams : lichen, moss and liverwort growing on ground and epiphytically, more like a measurement of abundance
  - Soil : exposed mineral soil (excluding duff)
  - Litter: woody material that has fallen from the trees and shrubs that is now covering the surface of the soil. This includes downed wood less than 10cm in diameter on the ground or attached to class 1 down woody debris, twigs, and cones. Litter does NOT include leaves (fronds and deciduous leaves; including conifer needles)
31. Coarse woody debris: Downed wood > than 10 cm in diameter. Give the percentage cover of down trees in the appropriate decay class section. Class 1 woody debris with branches still attached; material with a diameter greater than 10cm will be counted as coarse woody debris, everything smaller will be counted as litter.
32. Forest Zone: Sitka Spruce, Western Hemlock, Silver Fir, Mountain Hemlock, Subalpine, Douglas Fir, Ponderosa Pine, Non Forest. Use plant association guide to determine zone.
33. Plant Association: Use the plant assoc. guide to key to the right series, enter the name and code.
34. Lichen line: Give the distance in meters from ground to the lichen line, which is the line of average snow depth. It is not always evident, and is variable on either side of the tree, so the measurement the uphill side.
35. Cc under (canopy coverage of understory): Does not exceed 100%. Include herb, shrub, and tree regeneration below eye level. Do not include cryptogams. This is not a total of the % cover data additionally collected. Eye level was chosen as the breakpoint height because of its ease of measure and because the difference between two observers eye level is negligible when deciding percent canopy coverage. This difference in eye level is well with in the bounds of the assumed error. The measurement is rounded to the nearest 5%.
36. Cc over (canopy coverage of overstory): Does not exceed 100%. The total percentage cover of all tree and shrub species above eye level. The measurement is rounded to the nearest 5%.
37. Successional Stage: Young, Even, Mature (even aged, no real mortality), Late Successional (trees in different stages of development, snags and large downed wood) and Climax (late seral stage dominate, more downed wood present at different stages of decomposition). Most plots will be in mature to late successional.
38. Cryptogram/Fungi species: list any known species

## Appendix D Fungi Habitat Survey Form

Survey date: mm \_\_\_\_ dd \_\_\_\_ year \_\_\_\_ Type of Survey: \_\_\_\_\_

Crew \_\_\_\_\_

Ownership: BLM USFS NPS Other: \_\_\_\_\_ Land admin. by \_\_\_\_\_

Location \_\_\_\_\_

Directions \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Co. \_\_\_\_\_ State \_\_\_\_\_ Legal: T \_\_\_\_\_ R \_\_\_\_\_ S \_\_\_\_\_ 1/4S \_\_\_\_\_ 1/16S \_\_\_\_\_

Map/quad \_\_\_\_\_ Scale \_\_\_\_\_ Lat. Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec. \_\_\_\_\_

Air Photo# \_\_\_\_\_ Long. Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec. \_\_\_\_\_

Plot ID \_\_\_\_\_ Micro V \_\_\_\_\_

%Slope \_\_\_\_\_ Elev. ft \_\_\_\_\_ Micro H \_\_\_\_\_

Aspect ° \_\_\_\_\_ Plot size \_\_\_\_\_ Topo. moisture \_\_\_\_\_

Land form \_\_\_\_\_ Regolith \_\_\_\_\_

MacPos \_\_\_\_\_ Soil type \_\_\_\_\_

MicPos \_\_\_\_\_ Bedrock \_\_\_\_\_

Land use / threat/ allocation \_\_\_\_\_

**Habitat Description and Notes** Write verbal description of plot, use other sheet if necessary. Does the data describe the plot correctly? Does the plot accurately represent the area? ie: fire history, stand structure, plot outliers, canopy layers, species distribution/ patchiness, animal sign. Statement on feeling about plot placement in relation to depth of available location data and current plot placemtn.

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