Appendix III. Fungi Work Group
Priority Information and Conservation Gaps

GOALS AND OBJECTIVES OF THE WORK GROUP MEETING

Develop a longer-term, larger-scale strategy to address key information and conservation gaps to assist in managing fungal species in accordance with BLM and FS Special Status and Sensitive Species policies. This will entail the identification of priority tasks, including personnel and monies needed, timelines, and expected products.

The following personnel participated in the Fungi workgroup.

- Kathy Cushman, Fremont/Winema NF
- Rick Dewey, Deschutes NF
- Russ Holmes, FS Region 6 Regional Office
- Rob Huff, BLM State Office/ FS Region 6 Regional Office
- Jennifer Lippert, Willamette NF
- Kelli Van Norman, BLM State Office/ FS Region 6 Regional Office
- Molly Widmer, Eugene District BLM

The team held meetings on August 22-24, 2006 in Eugene, Oregon.

BRAINSTORMING INFORMATION AND CONSERVATION GAPS:

The team identified important information and conservation gaps that impede FS/BLM ability to manage for or evaluate project effects for these fungal species. Through Structured Brainstorming the Team identified the gaps in knowledge in 5 main categories: Habitat, Surveys/Survey efforts, Life History, Site issues/Threats, and Population Monitoring and Trends. The Team then determined the relative priority of addressing each of the gaps, determining "high", "medium", "low", and "other" gaps.

HIGHER PRIORITY GAPS*:*

H1: Develop a more detailed description of habitat for each species, including general habitat (plant community) and hosts/substrates.

- Can we use existing data (99-01, CVS, KSS) to look at habitat?
- Contract regional sources of expertise.

H2: Are there areas where regional level surveys are needed to help determine distribution, address gaps? How would we identify areas to survey (hotspots?) and how would the surveys be conducted (protocol)?

H3: What are the effects of:

a. fuel reduction treatments in different eastside forests?
b. thinning and regen harvest in westside forests on fungi?
c. chemical applications (herbicides for noxious weeds, foam from fires, fertilization) to fungal known sites?

MEDIUM PRIORITY GAPS:

M1: Need to better define the distribution and range of all the SSS fungal species

- What is the distribution and habitat of *Bridgeoporus nobilissimus* outside the center of its range.

M2: What are the critical legacy components (per mycorrhizal/saprobe or suites of species)? How much of each are needed? Can we develop prescriptions to maintain them over the long term? If someone does research on what legacy components are needed, then it can be used in project prescriptions.

M3: Need to know more about organism size per species because it relates to how large of an area we manage. (Does it fruit when it's a certain size?)

M4: Are the management areas we are prescribing effective?

LOWER PRIORITY GAPS:

L1 Need a better way to detect the fungal species than just the sporocarps, which are unreliable and difficult to detect.

L2 Do modeling efforts pay off in detecting new populations of rare fungi?

L3 Current assessment of distribution of species and easy access to the information (updated maps of site locations and copies of data).

L4 Need trend info. Use the CVS and KSS sites as baseline.

OTHER GAPS

- Can we use the data we have to determine if there are fungal hotspots (landscape scale versus survey area scale)?
- Are historic sites extant and what is their habitat?
- Is there a way to determine appropriate best management practices, landscape level mitigation, or design for maintaining fungal diversity across a certain percentage of a watershed?
- How to manage fungal species hotspots in a project area? Can it be tied to Best Management Practices?
- Are there suites of associated fungal species? If you find one, are you likely to find another?
- Are there large areas on the landscape (ecoregions, etc.) where the 65 sensitive species are not likely to be found?
- Who outside the FS/BLM is doing surveys in the PNW, where, and what did they find? Need a clearinghouse for ongoing work.
- Would like to know what the fungal community is at a site and how it changes over time (monitoring). Would help to understand the effects of natural activities and human actions. DEMO project did look at this.
- Interactions of the fungal life history with animals, bacteria, etc.?

- What specific environmental conditions prompt sporocarp production? Varies by species?
- What is the viability of spore bank in the soil? By species? As it relates to changes in stand (regen harvest, etc.)?
- Set-up long-term demographic monitoring for BRNO. At some places the conks are dying out. What is going on with the populations?
- Need to get fungal information from other sources like researchers and universities.
- Are there fungi groups for which field guides would be useful?
- Is there a training need for identification and locating incidentals?
- Are species only found in certain seral stages? Would help in pre-project review.
- For the life cycle of each species: How long does an organism live per species, dispersal, vegetative reproduction, asexual reproduction, hosts/substrate, weak spots in their cycle, and would our activities affect any of these?
- Collect and collate any monitoring work that has already been done.
- Who are the key resources available in region with knowledge about these species.
- Are there better ways of finding new sites?
- What eats the species?
- Do human activities affect underground competition?
- Is the 640 acre buffer more than what is needed for BRNO?
- How is fungi abundance defined/determined? What is the abundance of the organism at a site or in a population?
- How is fungi rarity defined/determined? How many of the fungal species are really rare?
- Are the fungal species documented and suspected calls correct?

UPDATE/STATUS OF INFORMATION AND CONSERVATION GAPS

Tasks have been initiated to address many of the gaps identified above as high priority. For instance, gap H1 was initiated and completed in support of this Conservation Assessment. The results of H1 are displayed in the text of Appendix 1, for each of the 49 species within the Forest Service Region 6 or BLM OR/WA SSSSP. Tasks to address gap H2 have also been initiated, with contracts to conduct fungi surveys to address this gap likely to begin in FY08. Also, gap H3 is being addressed through an update to an effects bibliography that is posted on the OR/WA BLM and Region 6 FS website. A thorough review of existing literature is being conducted, and an update to the table posted at http://www.fs.fed.us/r6/sfpnw/issssp/documents/planning-tools/20041229-attachment04-potential-impacts.doc will be completed in late FY07 or early FY08. Additional tasks to address these and other priority gaps will occur in subsequent years.