

Final Report
Interagency Special Status/Sensitive Species Program
Inventory and Conservation Planning
Eugene District 2014 Special Status Fungi Inventory Surveys

Douglas M. Goldenberg, Botanist, Eugene District BLM
February 5, 2016

Introduction

There are many Special Status fungi, and several have been found on the Eugene District (see Eugene District Special Status Fungi List, attached). No pre-disturbance clearance surveys are planned for Special Status fungi, yet the BLM is committed to making some effort to conserve these species and to ensure that agency actions do not contribute to a need to list these species. Currently, direction is to not perform pre-disturbance clearance surveys, but rather to consider management of known sites coupled with broad scale inventories as adequate for the management of the species. This report describes fungi surveys conducted to locate Special Status fungi sites in forest stands, for the purpose of subsequent site monitoring and management as well as background range, distribution and habitat information. The surveys specifically helped fill a geographic information gap by surveying areas outside of the townships previously surveyed on the Eugene District, including the West Eugene Wetlands, which has about 250 acres of forest and woodlands, besides wet prairies. These surveys helped fulfill the Eugene BLM's commitment to pursue broad-scale inventories. Although the original purpose of the surveys was to document Special Status Species, there were also Survey and Manage (S&M) Species located, and this study helps fulfill the commitment to pursue Strategic Surveys under the S&M program. The Special Status and S&M lists overlap to an extent.

Methods

In the fall of 2014 and spring of 2015, 668 acres were surveyed by contract for all Special Status fungi documented or suspected on the Eugene District. Surveys targeted 21 Sensitive Species, 92 Strategic Species, 20 Oregon Biodiversity Information Center (ORBIC) List 3 Species, 5 ORBIC List 4 Species and 4 Eugene District Review species (see list, Attachment 2). Nine units were picked at random from the Forest Operations Inventory GIS layer, excluding five townships each of the Siuslaw (SI) and Upper Willamette (UW) Resource Areas (RA) where previous surveys occurred (see map, Attachment 1). Units were chosen at random to reduce bias and allow habitat relations to be explored. A unit was chosen non-randomly in the West Eugene Wetlands, based on access to a large forested block in this unique area. Generally only units with adjacent open, drivable roads were chosen, to reduce surveyor travel time. Units older than 30 years were selected, due to the tree and shrub density and expected poor habitat of younger units. Also excluded were FOI units smaller than 10 acres, isolated coastal tracts, and units with active timber sales. The contract cost was \$31.80 per acre, plus an incentive payment of \$50.00 per target fungal species site reported.

The survey contract had the following characteristics:

- Surveys were for both epigeous and hypogeous fungi.
- To fulfill the fungi survey protocol (VanNorman et al. 2008) each unit was to be surveyed two times at three week intervals during the height of the fall and spring fruiting seasons, generally between October 21 and December 21, and between May 10 and July 10. Surveys were to be started at once if conditions were productive for sporocarps, or delayed if conditions were too dry or cold and unproductive. The final fall survey visit could be waived if persistent snow or a persistent hard freeze ended the fungal fruiting season early. The fungi survey protocol requires at least 2 survey visits but with more than two visits being preferable. Considering the usual weather patterns in the Eugene area, the protocol would probably result in each unit being surveyed 3 times in the fall, and 6 times in the spring. However, previous data found that the majority of sites could be found with only two visits per season. Two visits per season should result in more areas being surveyed, and more sites being found, given an overall limited budget.
- The intuitive controlled survey method was used to survey for both hypogeous and epigeous species.
- Hypogeous fungi were surveyed for by raking in the most likely habitats. Survey intensity was to be great enough so that inspection criteria were likely to be fulfilled.
- Inspection criteria centered on reduced payment in case of an excess of missed sites. In particular, a 20% deduction in payment for acres surveyed would be made if more than 2 sites and more than 20% of Special Status Sites were missed, as located during inspections and independently verified. The percentage of missed sites would be calculated as the additional sites found by the inspectors, divided by the sites found by both the inspector and contractor. For example, if the contractor locates 20 sites, and the inspectors locate more than an additional 5 missed sites, a 20% deduction would be made. To ensure inspection feasibility, the contractor was to inform the COR weekly of any units visited the previous week, so that an inspection could be made within one week.
- Vouchers of all potentially target species were collected for expert identifications as per ISSSSP/S&M policy, and fresh specimens were digitally photographed.

The survey units are described in Table 1. Stands with a birth date of 1810 or 1820 are the oldest on the Eugene District, are considered old growth stands on the Eugene District, and generally contain trees originating much earlier than 1810. This year, no old growth stands were selected; the oldest stand was 114 years. The age class is determined by the dominant layer in the stand, normally the overstory. The Oak Hill unit, in the West Eugene Wetlands, did not have a forest age estimate.

| Unit Number | RA | Age Class | Overstory Birth Date | Acres | Section | Sites Found |
|-------------|----|-----------|----------------------|-------|------------|-------------|
| Oak Hill | SI | | | 33 | 17S-04W-30 | 1 |
| Oak Hill | SI | | | 16 | 17S-04W-30 | |
| 832837 | SI | 50 | 1968 | 12 | 19S-05W-19 | |
| 841884 | SI | 50 | 1965 | 48 | 19S-07W-11 | |

| | | | | | | |
|--------|----|-----|-------|-----|------------|----|
| 832288 | SI | 50 | 1965 | 99 | 20S-04W-1 | |
| 831419 | SI | 110 | 1900 | 152 | 20S-07W-1 | 5 |
| 812391 | UW | 40 | 1977 | 25 | 15S-01W-33 | 2 |
| 813825 | UW | 100 | 1910 | 22 | 16S-02E-30 | |
| 810842 | UW | 80 | 1930 | 169 | 16S-02W-7 | |
| 820726 | UW | 60 | 1950 | 59 | 22S-01W-9 | 3 |
| 821075 | UW | 60 | 1950 | 33 | 22S-04W-25 | |
| | | | TOTAL | 668 | | 11 |

Results

Fall visits occurred from November 4 to December 19, 2014. Spring visits occurred April 15 to June 22, 2015. Eleven new sites representing nine target fungal species were found with no additional sites found by the project inspector (Tables 1 and 2). Four of the species found were new to the Eugene District. *Coprinopsis friesii* and *Nemania serpens* var. *hydnicola* are apparently rare as they had not been documented before in Oregon according to PNW Key Council records. *Hohenbuehelia petaloides* was also not positively documented before in Oregon according to PNW Key Council records, but it is often reported at the Mount Pisgah Arboretum Mushroom Show. All of the Eugene District Review species in Table 2 are to be submitted to ORBIC for consideration as rare species, except that *Hohenbuehelia petaloides* is actually a species group, and therefore more taxonomic work is necessary. Steve Trudell said of the specimen: “The macromorphology (including brown cap color and fan-shape) and micromorphology (including thick-walled, acutely pointed, cheilocystidia and pleurocystidia with apical debris), indicate *H. petalodes* in the broad sense. However, there are several similar species in that group and the species concepts are not applied in a consistent fashion, including by workers in the Pacific Northwest. The "real" *H. petalodes* is said to occur on soil in lawns, planters, and landscape beds, whereas species such as *H. tremula* occur in conifer forests. The habitat of this collection suggests the latter species, however, the few that I found were a bit small for that species.” It is expected that some rare, forest dwelling species may occur within this species group.

| Species | SI Sites | UW Sites | Status (as of 2016) | Comments |
|--|----------|----------|------------------------|------------------------|
| <i>Coprinopsis friesii</i> | 1 | | Eugene District Review | New to Eugene District |
| <i>Dendrocollybia racemosa</i> | | 1 | Strategic, S&M B | |
| <i>Gymnopilus punctifolius</i> | | 1 | Eugene District Review | |
| <i>Hohenbuehelia petaloides</i> | 1 | | Eugene District Review | New to Eugene District |
| <i>Nemania serpens</i> var. <i>hydnicola</i> | 1 | | Eugene District Review | New to Eugene District |
| <i>Phaeocollybia californica</i> | 2 | | Sensitive, S&M B | |
| <i>Ramaria suecica</i> | | 2 | Strategic, S&M B | New to the UW RA |
| <i>Sowerbyella rhenana</i> | 2 | | ORBIC List 3, S&M B | |
| <i>Tuber gardneri</i> | | 1 | Eugene District Review | New to Eugene District |
| TOTAL | 7 | 5 | | |

Identification Issues

Identification of fungi to species continues to be difficult. Of 18 specimens turned in to taxa experts, only 10 specimens were correctly identified by the survey contractor. For the other specimens, different names were given by taxa experts than originally determined, but often the genus was correctly determined. Continued access to taxa experts is critical, especially for difficult genera such as *Phaeocollybia* and *Ramaria*.

Contract Inspection

The contract inspection provision regarding missed sites was implementable. No collections found by the inspectors were a target species, representing missed sites. Using the inspector's results in comparison indicates that the contractor was probably finding sites at a good rate.

Discussion

There were relatively few sites of target fungal species found, as compared with previous surveys and given the acreage covered, but new species were found (Table 2). No sites were found during spring surveys, except for the single site of *Tuber gardneri* found in May. In general, it was a poor year for fungi fruiting, probably due to a relatively warm, dry climate period. According to data from the Eugene Airport, the 2014 mean temperature was 55 degrees Fahrenheit, 2.5 degrees above normal, and precipitation was 41.3 inches, 4.8 inches below normal. Likewise, 2015 temperature was 55.6 degrees, 3.1 degrees above normal, and precipitation was 32.24 inches, 13.86 inches below normal. Also, previously listed species have been dropped as too common from the Special Status Species Lists, leaving only less frequently found species on the target species list.

This survey provided an increase in the understanding of these species' distribution and range. Ongoing Special Status fungi surveys continue to find species new to the Eugene District (Table 3), emphasizing the unfinished nature of these surveys. Additionally, the list of species considered rare or possibly rare is likely to change over time, hence new information will likely continue to accrue.

| Year | Acres | Sites Found | Species New to the District | Comments |
|------------------------|--------------|--------------------|------------------------------------|-------------------------------------|
| Fall 2008 | 754 | 24 | 7 | Single fall visit. |
| Fall 2010 | 593 | 53 | 5 | 3 fall visits. |
| Fall 2011 | 756 | 38 | 6 | 3 fall visits. |
| 2012-2013 | 129 | 17 | 4 | Visited every 3 weeks for one year. |
| Fall 2013, Spring 2014 | 656 | 18 | 2 | 2 fall and 2 spring visits. |
| Fall 2014, Spring 2015 | 668 | 11 | 4 | 2 fall and 2 spring visits. |

Figure 1. *Coprinopsis friesii*, new to the Eugene District. Photograph by Scot Loring.



Figure 2. *Hohenbuehelia petalodes*, s.l., new to the Eugene District. Photograph by Scot Loring.

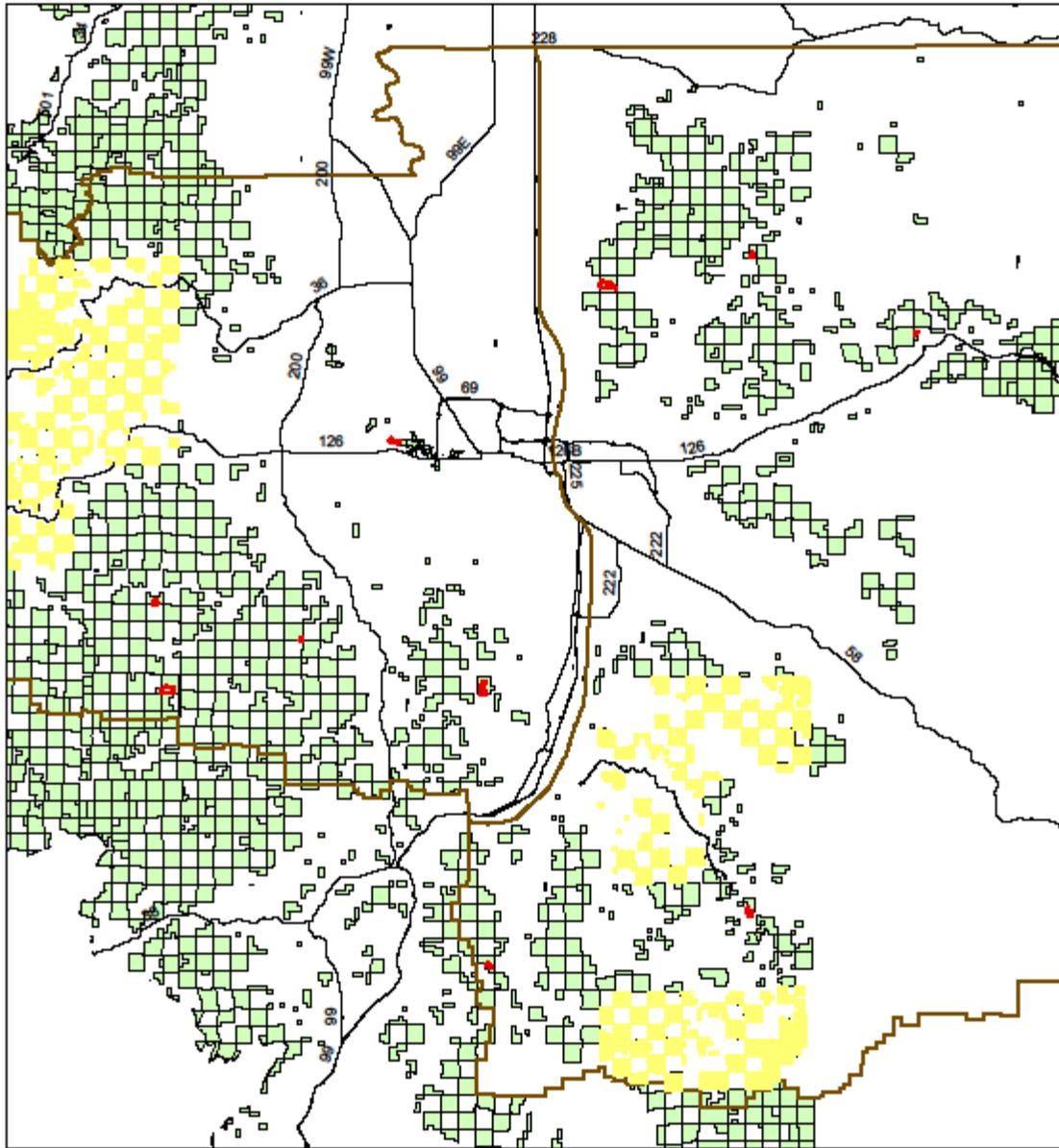


References

Van Norman, K., J. Lippert, D. Rivers-Pankratz, R. Holmes, and C. Mayrsohn. 2008. Sporocarp Survey Protocol for Macrofungi, version 1.0. Portland, OR. Interagency Special Status/Sensitive Species Program. U.S. Department of Interior, Bureau of Land Management, Oregon/Washington and U.S. Department of Agriculture, Forest Service, Region 6. 16 pp.

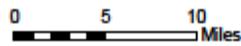
Acknowledgments

Many thanks to Scot Loring for performing the contracted field work, and Kelli VanNorman for manuscript review.



Eugene District 2014/15 Fungi Units
 Survey Units are in red. Excluded townships are in yellow.

- Fungi_Units_2014
- FOI_Fungi_2010
- RA_boundaries
- Highways
- BLM Ownership



1:500,000 NAD 1983 Con US



| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|----------------------------------|---|-----|-----|--|
| <i>Acanthophysium farlowii</i> | <u>Strategic</u> ORBIC List 3 | Ne US, Canada, WA, Linn Co. | S | E | On recently dead twigs of <i>Abies</i> , <i>Tsuga</i> , PSME. 1400 feet in Linn Co. May. |
| <i>Albatrellus avellaneus</i> | <u>Sensitive</u> ORBIC List 1 | CA, WA, Coos Co. | S | E | Terrestrial, assumed mycorrhizal with Pinaceae. Oct, Nov, Jan |
| <i>Albatrellus caeruleoporus</i> | <u>Strategic</u> ORBIC List 3 | BC to CA, Eastern N.A., NS: Lane Co. | S | E | Terrestrial, assumed mycorrhizal with <i>Tsuga</i> . Sept-Dec. |
| <i>Albatrellus dispansus</i> | <u>Strategic</u> ORBIC List 3 | Asia, e N.A., ID, AZ, Marion Co. | S | E | |
| <i>Albatrellus ellisii</i> | ORBIC List 4 | CA, WA, ID, NS: SI RA | D | E | Forests. Oct-Jan. 500-6000' elevation. PSME, TSHE, ABAM, PICO, etc. |
| <i>Albatrellus skamanius</i> | <u>Strategic</u> ORBIC List 3 | E Asia, WA, Marion Co. | S | E | |
| <i>Amanita novinupta</i> | <u>Strategic</u> ORBIC List 3 | BC to ID, CA, NS: Lane Co. | S | E | |
| <i>Amogaster viridigleba</i> (= <i>Lepiota viridigleba</i>) | ORBIC List 3 | CA, OR. NS. Douglas Co. | S | H | Under PSME in the Cascades. June. |
| <i>Arcangeliella camphorata</i> | <u>Sensitive</u> ORBIC List 1 | BC, WA, to Coos and Lane Co. | S | H | Coast Range RA specimen verified by James Trappe, but no site report available. Mar-Jul, Oct, Nov. PSME, TSHE associate. 20-3000' elevation. |
| <i>Arcangeliella crassa</i> | <u>Strategic</u> ORBIC List 3 | CA, Coos, Douglas, Wasco Cos. | S | H | <i>Abies</i> , <i>Pinus</i> mixed conifer in CA, 6500'. Coos Co. site at 2200'. |
| <i>Balsamia alba</i> | <u>Strategic</u> | OR, CA. Columbia and Douglas Co. in Coast Ranges. | S | H | |
| <i>Balsamia nigrens</i> (= <i>B. nigrescens</i>) | <u>Strategic</u> ORBIC List 3 | CA to Benton Co., Yamhill Co. | S | H | Mar, Jun, Oct, Dec. <i>Abies</i> , <i>Quercus</i> , PSME, PIJE, low to mid elevation. |
| <i>Boletus pulcherrimus</i> | <u>Sensitive</u> | WA to CA, NS: UW RA | D | E | Humus, ABGR, PSME, hardwoods. Possibly documented, but no site report available. July-Dec. 60-6000' elevation. |
| <i>Boletus regius</i> | ORBIC List 3 | NS: UW RA | D | E | |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|--|---------------------------|---|-----|-----|---|
| <i>Bondarzewia mesenterica</i> (= <i>B. montana</i>) | Eugene District Review | BC to nCA, Europe; NS: UW RA | D | E | Late successional conifer forests, often associated with large stumps or snags; fruits from August to December. Locally rare. Large wood habitat indicator. |
| <i>Bryoglossum gracile</i> | Strategic ORBIC List 2 | Canada, Eurasia, WA, OR. NS: Will. NF. | S | E | On subalpine to arctic mosses. At 2000' Hehe Creek Lane Co. Aug-Oct. |
| <i>Catathelasma ventricosum</i> | ORBIC List 3 | BC to CA, NS: Linn Co. | S | E | Forests, especially <i>Picea</i> and <i>Abies</i> . Sep-Jan. |
| <i>Chamonixia caespitosa</i> | Sensitive ORBIC List 2 | WA to CA, NY, Europe. NS: Lincoln and Tillamook Co. | S | H | <i>Abies amabilis</i> , <i>Tsuga</i> , <i>Picea sitchensis</i> , <i>Pseudotsuga</i> . Jun-Nov. 7-5000' elevation. |
| <i>Choiromyces alveolatus</i> | Strategic ORBIC List 3 | Western Cascades; NS: Linn, Douglas Cos. | S | H | <i>Abies</i> , <i>Tsuga</i> , <i>Pinus</i> , <i>Pseudotsuga</i> . May-Jul, Sept-Nov |
| <i>Choiromyces venosus</i> | Sensitive ORBIC List 2 | OR, CA, WV, Europe. Lane County; NS: UW RA | D | H | Low elevation; hosts are <i>Pseudotsuga menziesii</i> and <i>Tsuga heterophylla</i> . Aug, Oct. 1400-1600' elevation. |
| <i>Chrysomphalina grossula</i> | Strategic ORBIC List 3 | WA to CA. NS: Lane Co. | S | E | Coniferous debris, mixed forests and parks. <i>Pseudotsuga menziesii</i> and <i>Tsuga heterophylla</i> forests in PNW. Mar, Aug, Oct-Dec. |
| <i>Clavariadelphus subfastigiatus</i> | Strategic ORBIC List 3 | WA to ID, CA, NS: Douglas Co. | S | E | Mixed conifers. Oct-Dec. |
| <i>Clavulina castanopes</i> var. <i>lignicola</i> | Strategic ORBIC List 3 | BC to CA, NS: Lane Co. | S | E | On wood or bark. May, Oct, Nov. |
| <i>Clavulinopsis fusiformis</i> | Strategic ORBIC List 3 | BC to OR, E North America, Eurasia | S | E | |
| <i>Clitocybe senilis</i> | ORBIC List 3 | WA, Tillamook Co. E N.A., Europe. | S | E | Duff, conifer forests. Jul, Aug, Nov, Dec |
| <i>Conocybe subnuda</i> | Strategic ORBIC List 3 | OR, Europe. NS: Multnomah Co. | S | E | |
| <i>Cordyceps militaris</i> | Eugene District Review | North America, Europe. NS: SI RA. | D | E | Taxonomic questions. <i>Cordyceps</i> cf. <i>militaris</i> specimens with <i>J. Spatafora</i> may be a new or different species. |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|----------------------------------|---|-----|-----|--|
| <i>Cordyceps ophioglossoides</i> | ORBIC List 3 | WA to CA, E N.A., Eurasia. NS: Lane Co. | S | E | Parasitic on <i>Elaphomyces</i> . Sep-Nov. |
| <i>Cortinarius barlowensis</i> | <u>Sensitive</u> ORBIC List 2 | WA to CA, NS: Lane Co. | S | E | Coastal to montane conifer forests. Sep-Nov. 25-5000' elevation. TSHE to TSME. |
| <i>Cortinarius cyanites</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Benton Co. | S | E | Forests. Aug-Nov. |
| <i>Cortinarius depauperatus</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Lincoln Co. | S | E | Moist conifer forests, <i>Picea</i> , <i>Thuja</i> , <i>Tsuga heterophylla</i> . May-Jul; Sep-Oct. |
| <i>Cortinarius valgus</i> | ORBIC List 3 | WA to CA. NS: Lane Co.? | S | E | Conifer forests, <i>Abies</i> , <i>Picea</i> , <i>Pseudotsuga</i> , <i>Tsuga heterophylla</i> . Oct. |
| <i>Cudoniella clavus</i> | <u>Strategic</u> ORBIC List 3 | BC to CA, North America, Europe | S | E | |
| <i>Cystangium idahoensis</i> (= <i>Martellia i.</i>) | <u>Sensitive</u> ORBIC List 1 | OR, ID. NS: Lane Co., Willamette NF. | S | H | Associated with the roots of <i>Abies amabilis</i> , <i>A. lasiocarpa</i> , <i>A. procera</i> , <i>Picea engelmannii</i> , and <i>Tsuga mertensiana</i> from 1,200 to 1,650 m elevation. Sep, Oct. |
| <i>Dendrocollybia racemosa</i> (= <i>Collybia racemosa</i>) | <u>Strategic</u> ORBIC List 3 | WA to CA, E N.A., Europe. NS: UW, SI RA | D | E | Forests, on remains of other mushrooms or leaf mulch. Feb, Aug, Sep-Dec. |
| <i>Dermocybe humboldtensis</i> | <u>Sensitive</u> ORBIC List 1 | CA, OR, NS: Douglas Co. | S | E | Mycorrhizal, various Pinaceae. Nov. 1300-2000' elevation. PIPO, PSME, ABGR. |
| <i>Destuntzia fusca</i> | <u>Strategic</u> ORBIC List 3 | Endemic to OR and CA. NS: H.J.Andrews Experimental forest, Lane Co. | S | H | Forms sporocarps beneath the soil associated with <i>Lithocarpus densiflorus</i> , <i>Pseudotsuga menziesii</i> & <i>Tsuga heterophylla</i> , below 1000 m elevation. Oct, Dec. |
| <i>Destuntzia rubra</i> | ORBIC List 1-ex | CA, OR in Linn Co. | S | H | Low elevation nw CA; PSME, ABGR, ARME, tanoak, redwoods. OR Cascades. |
| <i>Elaphomyces asperulus</i> | <u>Strategic</u> ORBIC List 3 | OR, Europe. NS: Polk Co. | S | H | |
| <i>Elaphomyces decipiens</i> | <u>Strategic</u> ORBIC List 3 | OR, CA, LA, MS, Europe. NS: Benton Co. | S | H | |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|----------------------------------|---|-----|-----|--|
| <i>Elaphomyces reticulatus</i> | <u>Strategic</u> ORBIC List 3 | OR, Eurasia. NS: Lane Co. | S | H | |
| <i>Endogone oregonensis</i> | <u>Strategic</u> ORBIC List 3 | OR. NS: Douglas and Benton Co. | S | H | Mycorrhizal, <i>Picea sitchensis</i> , <i>Pseudotsuga menziesii</i> , <i>Tsuga heterophylla</i> . Feb, Jul, Sep-Nov. |
| <i>Galerina fuscobrunnea</i> | <u>Strategic</u> ORBIC List 3 | OR. NS: Cascades in Wasco Co. | S | E | |
| <i>Gautieria magnicellaris</i> | ORBIC List 3 | OR, CA, E N.A., Mex., Europe, NS: Deschutes Co. | S | H | <i>Abies concolor</i> in OR, pines in Mexico. July-Oct |
| <i>Genea compacta</i> (= <i>Gilkeya compacta</i>) | <u>Strategic</u> ORBIC List 3 | Polk Co., Willamette Valley, to Mexico. | S | H | PSME, Pinus, Abies, Quercus. Feb.-Aug. |
| <i>Glomus pubescens</i> | <u>Strategic</u> ORBIC List 3 | OR, NJ, Japan. NS: Coos and Douglas Co. | S | H | |
| <i>Gomphus kauffmanii</i> | <u>Strategic</u> | BC to ID, CA, NS: Lane Co. | S | E | <i>Pinus</i> and <i>Abies</i> . Aug-Dec, Jan. 200-7000' elevation. PSME, TSHE, ABAM, TSME. |
| <i>Gymnomyces compactus</i> | ORBIC List 3 | Oregon: Clackamas, Douglas, Yamhill Co. | S | H | Under deep decayed fir wood. June. |
| <i>Gymnomyces cremeus</i> | ORBIC List 3 | Oregon: Benton, Douglas Co. | S | H | |
| <i>Gymnomyces monosporus</i> | <u>Strategic</u> ORBIC List 3 | Benton, Douglas Co. | S | H | Jun, Jul |
| <i>Gymnomyces nondistincta</i> | <u>Strategic</u> ORBIC List 1 | Clackamas, Klamath Co. | S | H | ABAM, TSME. Oct. 6000-7000' elevation. |
| <i>Gymnomyces setigerus</i> | ORBIC List 3 | WA, OR: Lane Co. | S | H | |
| <i>Gymnopilus punctifolius</i> | <u>Eugene District Review</u> | WA to n CA; NS: SI, UW RA | D | E | Fruits on well decayed (brown cubically rotted) large conifer stumps and snags; fruits Apr, Jun, August to December. Locally rare. Large wood habitat indicator. |
| <i>Hebeloma occidentale</i> | <u>Strategic</u> ORBIC List 3 | Clackamas, Wasco Co. | S | E | |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|-------------------------------------|--|-----|-----|---|
| <i>Helvella crassitunicata</i> | <u>Sensitive</u> ORBIC List 2 | Endemic to OR and WA. NS: Lane Co., Willamette NF. | S | E | Scattered or gregarious on soil along trails in montane regions with <i>Abies</i> spp. Jan, May, Aug-Oct. 1900-9200' elevation. PSME, TSHE, ABAM, TSME. |
| <i>Helvella elastica</i> | ORBIC List 3 | WA to OR; NS: UW, SI | D | E | Typically gregarious on soil under conifers in damp areas in fall; Does not routinely fruit in recently heavily disturbed areas; may fruit in open areas under conifers; fruits April- Dec. |
| <i>Hemimycena pseudocrispula</i> | <u>Strategic</u> ORBIC List 3 | Europe, Lane Co. | S | E | On wood. |
| <i>Hydropus marginellus</i> | <u>Strategic</u> ORBIC List 3 | WA to CA. NS: SI RA, UW RA. | D | E | Conifer wood, <i>Abies, Pinus</i> . Jun-Dec. Both June, Dec. on Eugene District. |
| <i>Hygrophorus albicarneus</i> | <u>Strategic</u> ORBIC List 3 | OR. NS: Lane Co. | S | E | |
| <i>Hygrophorus albiflavus</i> | <u>Strategic</u> ORBIC List 3 | Clackamas Co. | S | E | |
| <i>Hypomyces luteovirens</i> | ORBIC List 3 | BC to CA. NS: Clackamas Co. | S | E | Parasitic crust on Russulaceae. Sep, Oct. |
| <i>Imaia gigantea</i> | ORBIC List 3 | Japan, Appalachians, Douglas CO. | S | H | Sept, Oct. |
| <i>Leptonia caesiocincta</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, Europe. NS: Clackamas Co. | S | E | |
| <i>Leptonia exalbida</i> | ORBIC List 3 | BC to CA. NS: Douglas Co. | S | E | |
| <i>Leptonia foliocontusa</i> var. <i>discolor</i> | ORBIC List 3 | BC to CA. NS: Douglas Co. | S | E | |
| <i>Leptonia occidentalis</i> var. <i>occidentalis</i> | <u>Strategic</u> ORBIC List 1 | Benton, Marion Cos. | S | E | Nov. |
| <i>Leptonia rosea</i> var. <i>marginata</i> | <u>Strategic</u> ORBIC List 2-ex | WA to CA, NS: Lane Co. | S | E | |
| <i>Leptonia striatula</i> | ORBIC List 3 | WA, OR, Eastern NA. NS: Douglas Co. | S | E | |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|-------------------------------------|-------------------------------------|--|-----|-----|---|
| <i>Leptonia subeuchroa</i> | <u>Strategic</u> ORBIC List 2-ex | WA to CA. NS: Lane Co. | S | E | |
| <i>Leptonia violaceonigra</i> | <u>Strategic</u> ORBIC List 3 | WA to CA. NS: Linn Co. | S | E | |
| <i>Leucogaster microsporus</i> | ORBIC List 4 | WA to CA, NS: Lane Co. | S | H | PSME, TSHE. Jul-Nov |
| <i>Leucogaster odoratus</i> | <u>Strategic</u> ORBIC List 3 | CA to Lane, Linn Cos. | S | H | |
| <i>Lyophyllum acutipes</i> | <u>Strategic</u> ORBIC List 1-X | Clackamas Co. | S | E | |
| <i>Lyophyllum furfurellum</i> | <u>Strategic</u> ORBIC List 1-X | Clackamas Co. | S | E | |
| <i>Lyophyllum lubricum</i> | <u>Strategic</u> ORBIC List 1-X | Clackamas Co. | S | E | |
| <i>Lyophyllum pallidum</i> | <u>Strategic</u> ORBIC List 1-X | West Cascades of Jefferson Co. | S | E | |
| <i>Lyophyllum soldipes</i> | <u>Strategic</u> ORBIC List 1-X | Clackamas Co. | S | E | |
| <i>Macowanites chlorinosmus</i> | <u>Strategic</u> ORBIC List 3 | WA to CA. NS: lane Co. | S | H | Coastal Sitka spruce and western hemlock. Jan, Jul-Nov. |
| <i>Martellia medlockii</i> | <u>Strategic</u> ORBIC List 3 | Linn Co. | S | H | |
| <i>Melanogaster natsii</i> | ORBIC List 3 | WA to CA, NS: Benton Co. | S | H | |
| <i>Melanophyllum haematospermum</i> | <u>Eugene District Review</u> | North America, Europe. NS: SI RA. | D | E | Taxonomic questions. Species complex; material in the Pacific Northwest is likely an unnamed endemic. |
| <i>Mycena gaultheri</i> | <u>Strategic</u> ORBIC List 3 | Clackamas Co. | S | E | |
| <i>Mycena hudsoniana</i> | <u>Strategic</u> ORBIC List 3 | WA and Lane Co. | S | E | Apr-Jul. Woody debris near snowbanks, usually >2300 feet. |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|------------------------------------|--|-----|-----|---|
| <i>Mycena quinaultensis</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Lane Co. | S | E | On conifer needle duff, rarely wood. Oct-Dec |
| <i>Mycena tenax</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, E N.A., NS: Lane Co. | S | E | Duff under <i>Abies</i> , <i>Pseudotsuga</i> , <i>Picea</i> , <i>Sequoia</i> . Jun, Aug-Dec. |
| <i>Mythicomyces corneipes</i> | <u>Sensitive</u> ORBIC List 2 | OR, WA, northern Europe. NS: Lane Co. | S | E | Margins of bogs among mosses, or wet soil under conifers or alders. Aug-Oct. |
| <i>Nolanea edulis var. concentrica</i> | <u>Strategic</u> ORBIC List 3 | Lincoln Co. | S | E | |
| <i>Nolanea verna var. isodiametrica</i> | <u>Strategic</u> ORBIC List 3 | OR, ID, WY. NS: Douglas Co. | S | E | |
| <i>Octavianina macrospora</i> | <u>Strategic</u> ORBIC List 1-X | Clackamas Co. | S | H | <i>Tsuga heterophylla</i> , 3200 feet elevation.. Aug. |
| <i>Omphalina isabellina</i> | <u>Strategic</u> ORBIC List 3 | Clackamas Co. | S | E | |
| <i>Otidea smithii</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: UW | D | E | On soil, duff, moss, PSME, TSHE, black cottonwood. 1200-3800' elevation. Nov, Dec, Feb. |
| <i>Phaeocollybia californica</i> | <u>Sensitive</u> ORBIC List 1 | WA to CA, NS: UW, SI | D | E | Terrestrial, mycorrhizal, under conifers, coastal to montane moist forests. 300-4000' elevation. Apr-Jun, Sep-Jan. |
| <i>Phaeocollybia dissiliens</i> | <u>Strategic</u> ORBIC List 3 | CA, OR, NS: Lane Co. NS: UW, SI | D | E | Terrestrial, mycorrhizal, under conifers, moist forests. Mostly coastal and Coast Range. 300-2500' elevation. Sept-Dec. |
| <i>Phaeocollybia gregaria</i> | <u>Sensitive</u> ORBIC List 1 | Polk, Tillamook Cos. | S | E | Terrestrial, mycorrhizal, under conifers, moist forests. Coastal and Coast Range. 500-1500' elevation. Oct-Dec. |
| <i>Phaeocollybia lilacifolia</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: SI RA | D | E | Terrestrial, mycorrhizal, under conifers, moist forests. Oct. |
| <i>Phaeocollybia oregonensis</i> | <u>Sensitive</u> ORBIC List 1 | BC to OR, NS: SI RA | D | E | Terrestrial, mycorrhizal, under conifers, moist forests. 800-3800' elevation. Aug, Oct, Nov. |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|--|----------------------------------|--|-----|-----|--|
| <i>Phaeocollybia pseudofestiva</i> | <u>Strategic</u> ORBIC List 3 | BC to CA, NS: UW RA | D | E | Mature mixed conifers and hardwoods. 35-3700' elevation. April, May, July, Sept-Jan. |
| <i>Phaeocollybia radicata</i> | <u>Strategic</u> ORBIC List 3 | OR, CA, NS: SI, UW RA | D | E | Terrestrial, mycorrhizal, under conifers, moist forests. Oct-Dec. |
| <i>Podostroma alutaceum</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Lane Co. | S | E | Conifer forests, litter, dead wood. Apr, Jul-Dec. |
| <i>Polyozellus multiplex</i> | ORBIC List 4 | WA to CA, ID, E N.A., Japan, NS: Lane Co. | S | E | <i>Abies</i> , montane conifer forests. Aug-Jan. |
| <i>Pseudoaleuria quinaultiana</i> | <u>Strategic</u> ORBIC List 3 | WA to OR, NS: Lincoln Co. | S | E | Disturbed microsites (e.g. windthrow mounds) low elevation old growth, PISI, PSME, TSHE. March-May, Sept. |
| <i>Pseudorhizina californica</i> (= <i>Gyromitra c.</i>) | <u>Sensitive</u> ORBIC List 2 | BC to CA, ID, NS: Linn Co., Douglas Co. | S | E | Well-rotted stumps or logs of conifers; humus in moist areas, along streams. Apr-Oct. |
| <i>Radiigera bushnellii</i> | ORBIC List 3 | OR, Tillamook and Yamhill Co. | S | H | Coast Range, PSME forest. May, Aug. |
| <i>Ramaria abietina</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, ID, Eurasia, NS: Lane Co. NS: UW, SI RA | D | E | Conifer forests, often PSME, duff and debris. Aug-Dec., Jan-Mar. 1999 O'Dell Collection UW RA. |
| <i>Ramaria amyloidea</i> | <u>Sensitive</u> ORBIC List 2 | WA to CA, NS: Lane Co. | S | E | Coniferous forests. 1800-5500' elevation. PSME, TSHE, ABAM, TSME. Jul-Nov. |
| <i>Ramaria aurantiisiccescens</i> | ORBIC List 4 | WA to CA, NS: Lane Co. NS: UW RA | D | E | Coniferous forests. 560-7000' elevation, PSME, TSHE, ABAM, TSME. Sept-Jan. |
| <i>Ramaria botrytis</i> var. <i>aurantiiramosa</i> | <u>Strategic</u> ORBIC List 3 | WA to OR, NS: Douglas Co. | S | E | Coniferous forests. Sept-Nov. |
| <i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: SI RA | D | E | Coniferous forests. Oct-Dec. |
| <i>Ramaria gelatinaurantia</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Clackamas Co. | S | E | Coniferous forests. 1600-3600' elevation, PISI, PSME, TSHE. Sept-Jan |
| <i>Ramaria gracilis</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NY, Europe, NS: Benton Co. | S | E | Conifer duff; humicolous on twigs and needles. Sept, Nov, Dec. |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|----------------------------------|---|-----|-----|---|
| <i>Ramaria largentii</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Benton Co. | S | E | Coniferous forests. 1300-5100' elevation, PSME, TSHE, ABAM, ABGR. Mar, Jun, Sept-Nov. |
| <i>Ramaria maculatipes</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Lane Co. | S | E | Coniferous forests. Sept-Dec. |
| <i>Ramaria rainierensis</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, ID, NS: Coos Co. | S | E | Conifer duff; humicolous on twigs and needles. Mar, Dec. |
| <i>Ramaria rubella forma blanda</i> | <u>Sensitive</u> ORBIC List 2 | BC to CA, TN, NS: Lane Co. | S | E | 152-530' elevation, PISI, TSHE. On wood, <i>Picea</i> , <i>Alnus</i> . Oct, Nov. |
| <i>Ramaria rubribrunnescens</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: Douglas Co. | S | E | Coniferous forests. Sept-Nov |
| <i>Ramaria spinulosa var. diminutiva</i> | <u>Sensitive</u> | WA to CA, NS: Douglas Co. | S | E | Possibly documented Eugene, but no site report available. The only collection from Oregon was det. to be <i>Ramaria apiculata var. brunnea</i> , by Cazares 9-30-2011 |
| <i>Ramaria suecica</i> | <u>Strategic</u> ORBIC List 3 | BC to CA, NS: SI RA | D | E | On humus, conifer twigs and needles, sometimes deciduous litter. Oct, Nov. |
| <i>Ramaria tsugina</i> (= <i>R. concolor</i> f. <i>tsugina</i>) | <u>Strategic</u> ORBIC List 3 | WA to CA, ID, NS: Coos Co. | S | E | On rotting conifer wood.. Sept-Oct. |
| <i>Rhizopogon abietis</i> | <u>Strategic</u> ORBIC List 3 | CA, OR, ID, WY, E N.A. NS: Lane Co. | S | H | <i>Abies</i> , <i>Tsuga</i> , <i>Picea</i> , <i>Pinus</i> . July-Dec. |
| <i>Rhizopogon atroviolaceus</i> | <u>Strategic</u> ORBIC List 3 | OR, ID, NS: Lane Co. | S | H | <i>Pseudotsuga</i> , <i>Abies</i> , <i>Tsuga</i> , <i>Picea</i> , <i>Pinus</i> . May-Oct. |
| <i>Rhizopogon brunneiniger</i> | <u>Strategic</u> ORBIC List 3 | OR, CA, NS: Benton Co. | S | H | ABCO, PICO, PIMO, PSME, TSHE, TSME. Jun, Sept-Nov. |
| <i>Rhizopogon chamaleontinus</i> | <u>Sensitive</u> ORBIC List 2 | OR, ID, NS: Josephine Co. | S | H | PSME, PILA. Tanoak at 900'. Jun, Sept. |
| <i>Rhizopogon clavitisporus</i> | <u>Strategic</u> ORBIC List 2 | CR Lincoln Co., Cascades Clackamas Co., south to Klamath Ranges, ID | S | H | |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|-------------------------------------|--|-----|-----|--|
| <i>Rhizopogon ellipsosporus</i> | <u>Sensitive</u> ORBIC List 2 | OR, CA, Jackson, Josephine Co. | S | H | PSME, PILA. 1080-4000' elevation, PSME, TSHE, TSME. Apr, Oct-Jan. |
| <i>Rhizopogon exiguus</i> | <u>Sensitive</u> ORBIC List 2 | Endemic to OR, WA. NS: Lane Co. Mapleton. | S | H | 85-4000' elevation, PSME, TSHE. Mar, Sept, Nov. |
| <i>Rhizopogon flavofibrillosus</i> | <u>Strategic</u> ORBIC List 3 | OR, CA, ID, Montana. NS: Deschutes, Curry, Siskiyou, Josephine Co. | S | H | Associated with the roots of ABCO, ABLA, PIEN, PIAT, PICO, PILA, PIMU, PSME from 950 to 2350 m elevation. Mar, Apr, Jul, Nov. |
| <i>Rhizopogon inquinatus</i> | <u>Sensitive</u> ORBIC List 2 | OR, ID, NS: Linn Co. | S | H | PIJE, PSME, TSHE, TSME. 1280-4400' elevation. Sept, Oct. |
| <i>Rhizopogon rogersii</i> | <u>Strategic</u> ORBIC List 3 | OR, ID, NS: Polk Co. | S | H | Coast Range, Cascades, Blue Mountains; PSME, PIPO. July. |
| <i>Rhizopogon semireticulatus</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, ID. NS: Douglas and Linn Co. | S | H | Near sea level under PICO, to 4800'. PSME, PICO, PIPO, ABLA, Quercus, ARME. Apr-Jan. |
| <i>Rhizopogon subcinnamomeus</i> | <u>Strategic</u> ORBIC List 3 | OR, ID, NS: SI RA | D | H | Fall. |
| <i>Rhizopogon subclavitisporus</i> | <u>Strategic</u> ORBIC List 3 | OR, ID, NS: Lane Co. HJ Andrews. | S | H | PSME, mixed conifers. July. |
| <i>Rhizopogon subradicatus</i> | <u>Strategic</u> ORBIC List 2-ex | WA, OR, NS: Benton Co. | S | H | PIPO. Oct. |
| <i>Rhizopogon truncatus</i> | ORBIC List 4 | OR, CA, E N.A., NS: Lane Co. | S | H | Pinaceae, particularly pines. Jan, Apr-Dec. |
| <i>Rickenella swartzii</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, MT, Europe, NS: SI RA. | D | E | Among mosses under hardwoods. May be parasitic on mosses. May-Jan. June, July, Aug. on Eugene District. |
| <i>Sarcodon fuscoindicus</i> | <u>Strategic</u> ORBIC List 3 | WA to CA, NS: SI RA | D | E | On soil. 34-6500' elevation, PSME, TSHE, ABAM. Sept-Jan. |
| <i>Sowerbyella rhenana</i> (= <i>Aleuria rhenana</i>) | ORBIC List 3 | w North America, CA, OR, WA. Europe and Japan. NS: SI RA | D | E | Fruits in duff of moist, relatively undisturbed, older conifer forests. 600-3600' elevation, PSME, TSHE, PIPO, PILA. May, Jul, Sept-Jan. |

| Species | Status | Range/Nearest Site | D/S | H/E | Habitat and Season |
|---|------------------------------|---|-----|-----|--|
| <i>Squamanita paradoxa</i> | Strategic ORBIC List 2-ex | Europe, BC, ID, OR. NS: Clackamas Co. | S | E | Parasitic on <i>Cystoderma</i> , which it transforms into a tan stem-like gall. Only a historic collection in OR. Nov. |
| <i>Stephensia bynumii</i> | Strategic ORBIC List 3 | Clackamas, Marion Cos. | S | H | |
| <i>Stropharia albovelata</i> (= <i>Pholiota a.</i>) | Strategic ORBIC List 3 | WA to CA, NS: SI RA | D | E | May, Aug-Dec. Under conifers in fall. |
| <i>Thaxterogaster pavelekii</i> | ORBIC List 1 | WA to CA. NS: Lincoln Co. | S | H | Coastal PISI, PICO forests; possible at Heceta Dunes ACEC. 17-588' elevation. Mar-Jun, Nov. |
| <i>Tuber asa</i> | Strategic ORBIC List 3 | OR, E N.A., Europe, NS: UW | D | H | PSME, TSHE, PIPO. Jan, Oct.. All North American <i>Tuber asa</i> are to be called <i>T. pseudoasa</i> . |
| <i>Tuber pacificum</i> | Strategic ORBIC List 3 | Coos, Lane and Polk Co., Coast Ranges | S | H | PSME, TSHE. Feb, Jun, Jul. |
| <i>Tuber quercicola</i> | ORBIC List 3 | OR, CA. NS: Douglas or Linn Co. | S | H | |
| <i>Urnula craterium</i> | Strategic ORBIC List 2-ex | OR, E N.A., Eurasia. NS: Benton Co. | S | E | |
| <i>Vibrissea filisporea</i> | ORBIC List 3 | OR, Eastern NA, Europe. NS: Marion Co. | S | E | |
| <i>Vibrissea truncorum</i> | ORBIC List 3 | Scattered globally. NS: SI RA. | D | E | On dead wood in streams. March |

D/S = Documented or Suspected on the Eugene District. H/E = Hypogeous/Epigeous
 Season is determined from the GeoBOB database site report dates, or other sources. Bold font = not found October, November, December.

ex, X = Extirpated in OR, Extinct. ORBIC=Oregon Biodiversity Information Center
 NS=Nearest site UW=Upper Willamette Resource Area SI=Siuslaw Resource Area

ORBIC List 1 contains taxa that are threatened with extinction or presumed to be extinct throughout their entire range.
 ORBIC List 2 contains taxa that are threatened with extirpation or presumed extirpated from the state of Oregon.

ORBIC List 3 contains taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.

ORBIC List 4 contains taxa which are of conservation concern but are not currently threatened or endangered.

In range but excluded due to high elevation or other factors: *Alpova alexsmithii*, *Brauniella albipes*, *Chroogomphus loculatus*, *Clitocybe subditopoda*, *Cortinarius boulderensis*, *Fevansia aurantiaca*, *Gastroboletus imbellus*, *Gastroboletus ruber*, *Gastroboletus vividus*, *Gelatinodiscus flavidus*, *Glomus radiatum*, *Gymnomyces fragrans*, *Hebeloma oregonense*, *Hebeloma parcivelum*, *Hydnotrya inordinata*, *Hydnotrya michaelis*, *Macowanites mollis*, *Psathyrella gruberi*, *Psathyrella oregonensis*, *Ramaria thiersii*, *Rhizopogon masoniae*, *Rhizopogon subpurpurascens*, *Stagnicola perplexa*, *Tricholomopsis fulvescens*.

This list may change during the course of the contract to accommodate changes in the status of species. Species may be added or deleted from this list.