

Final Report
Interagency Special Status/Sensitive Species Program
Inventory and Conservation Planning
Siuslaw Resource Area 2010 Special Status Fungi Inventory Surveys

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Introduction and Methods

Fungi surveys were 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. 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. These surveys helped fulfill the Eugene BLM's commitment to pursue broad-scale inventories.

In the fall of 2010, 593 acres were surveyed by contract for all Special Status fungi documented or suspected on the Eugene District. Surveys targeted 23 Sensitive Species, 78 Strategic Species, 12 ORBIC List 3 Species, 8 ORBIC List 4 Species and 4 Eugene District Review species (see list, Attachment 2). Seventeen units were picked at random from the Forest Operations Inventory GIS layer, in five townships each of the Siuslaw and Upper Willamette Resource Areas (see map, Attachment 1). Units were chosen at random to reduce bias and allow habitat relations to be explored. The set of townships was small, to reduce surveyor travel time, and selected as perceived areas of high fungal productivity, with less conflicts with timber sales. Only units older than 30 years were selected, due to the density and expected poor habitat of younger units. The contract cost was \$25.50 per acre, \$15,121.50 in total, plus an incentive payment of \$20.00 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 surveyed three times at three week intervals during the height of the fall season, generally between October 15th and December 30th. Surveys were to be started at once if conditions were productive for sporocarps, or delayed if conditions were dry and unproductive. The final 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 more than 2 survey visits is preferred, and surveys at three week intervals occur through the period from the time significant precipitation has moistened the substrate until there is persistent snow or a persistent hard freeze that impacts the understory.
Sites located on earlier visits were relocated on subsequent visits, to document if there were still visible sporocarps at the site.

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 called for a rework if inspection results revealed that both more than 10% of the special status fungi sites were missed and more than two (2) sites were missed, within a week's visits, as evidenced by inspection in the week following a visit.

Vouchers of all potentially target species were collected as per ISSSSP/SM 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. Unit 841065 is notable in that the predominant layer is from 1947 (60 year age class), but it has a large component of old growth legacy trees (1820 overstory birth date).

Unit Number	RA	Age Class	Overstory Birth Date	Understory Birth Date	Acres	Section	Sites Found
833910	SI	200	1810		13	16S-7W-13	3
833909	SI	40	1971		89	16S-7W-13	2
840819	SI	70	1940	1940	40	16S-8W-21	0
841065	SI	60	1820	1947	20	17S-7W-25	4
841224	SI	50	1960		33	17S-8W-27	4
833940	SI	200	1810		11	18S-8W-01	12
841678	SI	70	1938	1950	43	18S-8W-13	7
841725	SI	50	1960		57	18S-8W-25	9
820221	UW	110	1900		89	20S-1W-23	9
820240	UW	40	1966		19	20S-1W-25	1
820352	UW	40	1970		17	20S-2W-23	1
820596	UW	110	1895		11	21S-2W-31	0
823851	UW	200	1810		22	23S-1W-09	0
821319	UW	200	1810		89	23S-2W-11	0
822572	UW	40	1965		9	23S-2W-15	0
821651	UW	120	1890		11	23S-2W-24	0
821406	UW	200	1810	1890	20	23S-2W-27	1
				TOTAL	593		53

Results and Discussion

Fifty three new sites representing 20 target fungal species were found (Tables 1 and 2), including two sites found by the project inspectors. Only two species, *Leucogaster citrinus*, and *Rhizopogon subcinnamomeus*, are hypogeous. An additional hypogeous specimen was thought to be a possible new genus by mycologist Dr. Efren Cazares; this specimen awaits

further study. Five of the twenty species found were new to the Eugene District, and two were new to one of the resource areas (Table 2). Many more sites were found on the Siuslaw Resource Area than the Upper Willamette RA despite similar survey acreages (306 and 287 acres respectively). This survey provided an increase in the understanding of these species' distribution and range.

Table 2. Species Located in Fall 2010 Surveys.				
Species	SI Sites	UW Sites	Status	Comments
<i>Dendrocollybia racemosa</i>	1	2	Strategic	New to Eugene District
<i>Gymnopilus punctifolius</i>	2		Eugene Review	
<i>Helvella elastica</i>		1	ORBIC List 3 SM Category B	
<i>Leucogaster citrinus</i>	2		ORBIC List 3 SM Category B	
<i>Phaeocollybia ammirattii</i>	1		Eugene Review	New to Eugene District
<i>Phaeocollybia attenuata</i>	5	2	Recently delisted from ORBIC lists SM Category D	
<i>Phaeocollybia benzokaufmanii</i>	1	1	Eugene Review	New to Eugene District
<i>Phaeocollybia californica</i>	3	1	Sensitive SM Category B	
<i>Phaeocollybia dissiliens</i>	1		Strategic SM Category B	
<i>Phaeocollybia lilacifolia</i>	1		Strategic	New to Eugene District
<i>Phaeocollybia olivacea</i>	6	1	Recently delisted from ORBIC lists SM Category D	
<i>Phaeocollybia radicata</i>		1	Strategic	New to Upper Willamette RA
<i>Phaeocollybia sipei</i>	6	2	Strategic Recently delisted from ORBIC lists SM Category B	
<i>Phaeocollybia spadicea</i>	2	1	Recently delisted from ORBIC lists SM Category B	
<i>Ramaria abietina</i>	1		Strategic SM Category B	New to Siuslaw RA
<i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i>	1		Strategic SM Category B	
<i>Ramaria stuntzii</i>	3		SM Category B Eugene Review	
<i>Ramaria suecica</i>	1		Strategic SM Category B	
<i>Rhizopogon subcinnamomeus</i>	1		Strategic	New to Eugene District
<i>Sowerbyella rhenana</i>	3		ORBIC List 3 SM Category B	
TOTAL	41	12		

Eugene District Review list species are under consideration for submission to ORBIC (Oregon Biodiversity Information Center), or are considered locally rare on the Eugene District. Some species have been recently delisted from the Oregon Biodiversity Center lists, i.e., during the course of the contract, including *Phaeocollybia attenuata*, which was not recorded past the earlier survey visits. *Phaeocollybia attenuata* was seen more often than reflected in the numbers of sites recorded above and is relatively frequent.

Identification Issues

Identification of fungi to species continues to be difficult. During this survey, 164 specimens were turned in to taxa experts, yet only 65 specimens were actually target species. Some specimens were turned in simply for the identification, regardless of whether they were thought rare. For 145 specimens, either different names were given by taxa experts than originally determined, or only the genus was originally determined. Continued access to taxa experts is critical.

Contract Inspection

The contract inspection provision regarding missed sites was not implementable, because it was unclear how many sites found by either the contractor or the inspector were really target species. Expert verification and identification was not available until late the following spring, due to the backlog in verification work region wide. Altogether, the contractors found 51 sites of Special Status and other target fungi, as verified by taxonomic experts, and the inspectors found 2 “missed sites”, i.e., sites found in the week following the contractors visit, during the approximately 10% inspection. The contractor therefore missed only 4% of the total sites (2/53). Using the inspector’s results in comparison indicates that the contractor was probably finding sites at a very good rate.

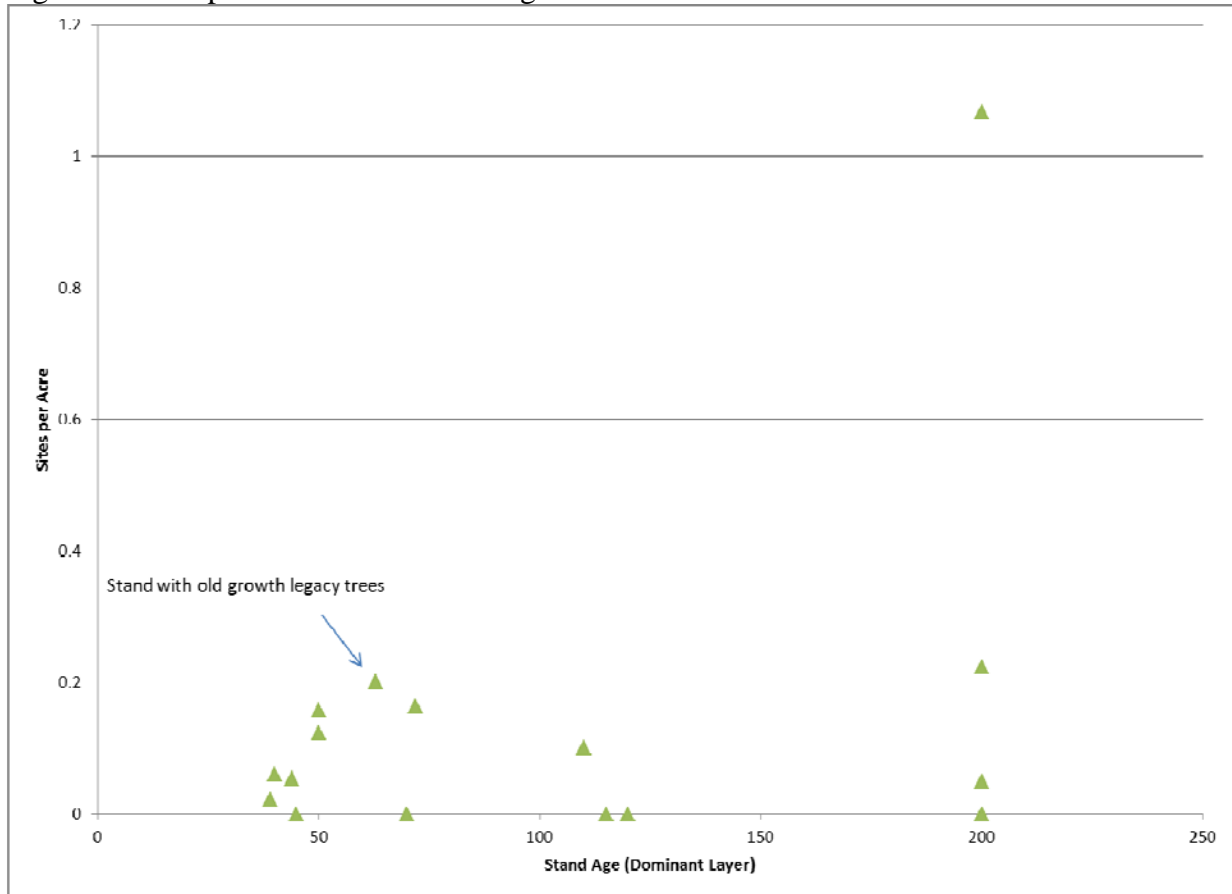
A possible contract stipulation that is more implementable would entail reduction in pay after results are finalized, rather than a rework during the course of the surveys. Already, an incentive payment was being made for sites reported and independently verified as target species. In an upcoming fungi survey contract, a 20% deduction in payment for acres surveyed will 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 will 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 will be made.

Correlation with Stand Age and Slope Angle

As part of the need for a better understanding of habitat associations, the correlation with stand age was explored. Each stand was considered a sample unit, and the number of sites of all target species found per acre was calculated (Figure 1). The Spearman Rank Correlation between sites/acre and age was not statistically significant ($P=0.98$). The lack of statistical significance does not necessarily imply that no relationship exists. No conclusions could be drawn, perhaps because of the low number of samples and variation due to other factors.

Correlating only the currently listed species (i.e., deleting the recently delisted species from the analysis) did not change the relationship. It appears that younger stands, including young stands with legacy components, in addition to old stands, are important habitats and are necessary to consider in conservation. More surveys, such as multi-year surveys, could help clarify any relationship.

Figure 1. Sites per Acre versus Stand Age.

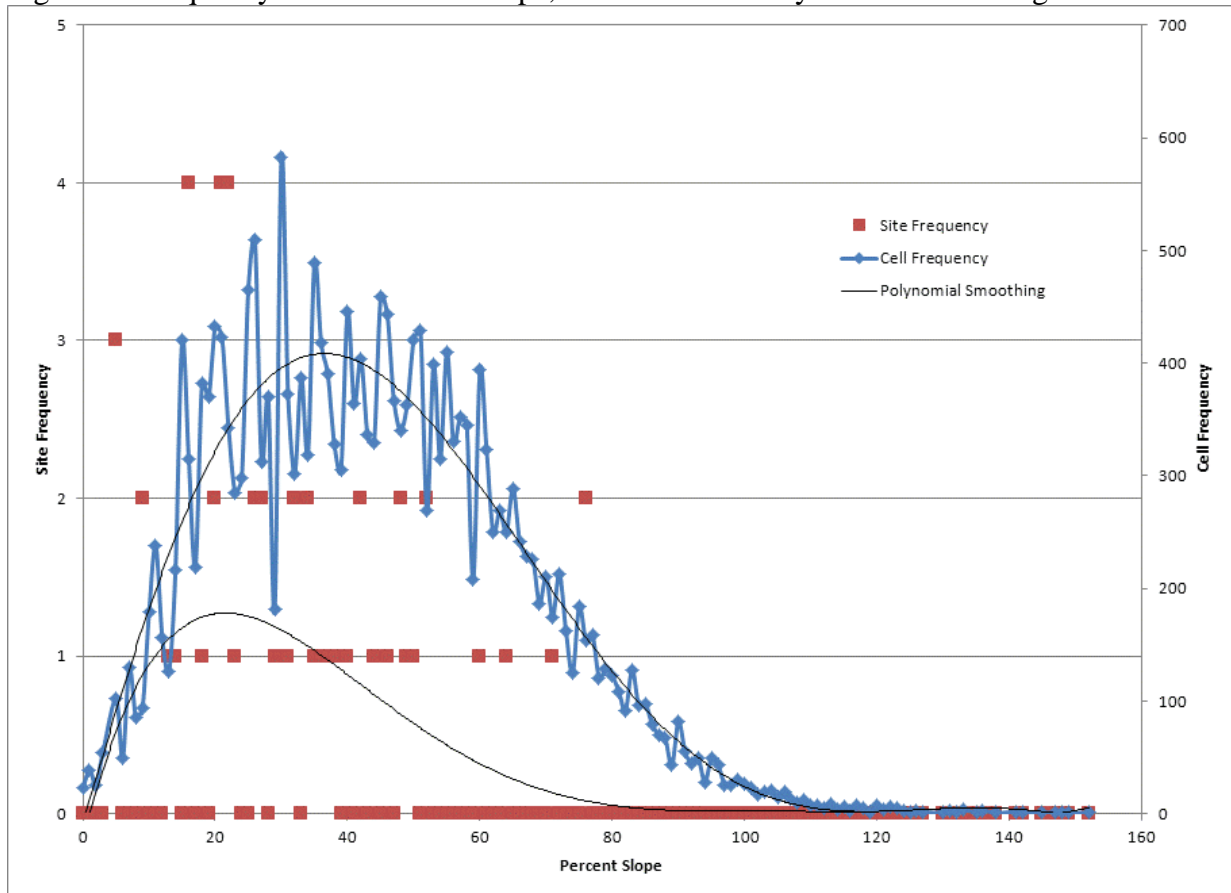


Fungi in general appear to be more common on shallower slopes, based on casual observation. The steeper slopes often have few fungi, possibly because the soils on steep slopes are well-drained, gravelly or skeletal. Coincidentally, older stands can seem to have steeper slopes, where gentler topography may have been preferentially harvested. Slope angles on the survey units were modeled in GIS using a digital elevation model. Percent slope was calculated in each 10 by 10 meter cell. Slope angles were averaged over each survey unit. The average slope angle in a unit did not correlate with the number of sites per acre in the unit ($P=0.23$, Spearman Rank Correlation), nor did slope angle correlate with stand age ($P=0.50$). Again, no conclusions could be drawn, perhaps because of the low number of samples and variation due to other factors.

Individual sites appeared to be localized to relatively shallow slopes within units, however. The sites occurred more often on shallower slopes than the overall population of all cells within all of the survey units (Figure 2). The median slope for the sites, as calculated with

the GIS model, was 28% (with a 95% bootstrap confidence interval for the median of 22-34.5), while the median slope of the population of cells was 43%.

Figure 2. Frequency versus Percent Slope, with 6th Order Polynomial Smoothing.



Fungi Phenology and the Utility of Three Survey Visits

Surveys included three visits, timed to coincide with the height of the fall fungal fruiting season. The first visit did not proceed until the fruiting season was already obviously starting. To elucidate fungi phenology and the utility of the multi-visit protocol (VanNorman et al. 2008), fungi sites located on the first or second visits were relocated on later visits to check if the species was still identifiable at the site. Any sporocarps at the site on the later visit were scored as (1) mature, (2) old but identifiable, or (3) present but likely too old to identify if casually encountered. In some cases, all of the original sporocarps were collected on the initial encounter, with no additional flushes located during subsequent visits; this occurrence may skew the data where the sporocarps would have otherwise been identifiable on subsequent visits. However, other sites were fully collected on the first encounter, yet more sporocarps grew at the site by the time of the subsequent visit. By the third visit in December, relatively few sites were identifiable (Table 3). The first visit located the majority of sites, and most sites were identifiable during more than a single visit (Table 4).

	1st Visit Oct. 20-Nov. 12	2nd Visit Nov. 12- Dec. 4	Third Visit Dec. 3 – Dec. 22*
mature	29	15	6
old but identifiable	4	22	7
too old to identify	0	4	13
mature plus old (identifiable)	33	37	13

* One unit had the third visit performed Nov. 21 due to an impending snowstorm.

Visit in which a site was first discovered		Number of visits in which a site was identifiable	
1 st visit	33 sites	1 visit	24 sites
2 nd visit	16 sites	2 visits	19 sites
3 rd visit	1 site	3 visits	7 sites

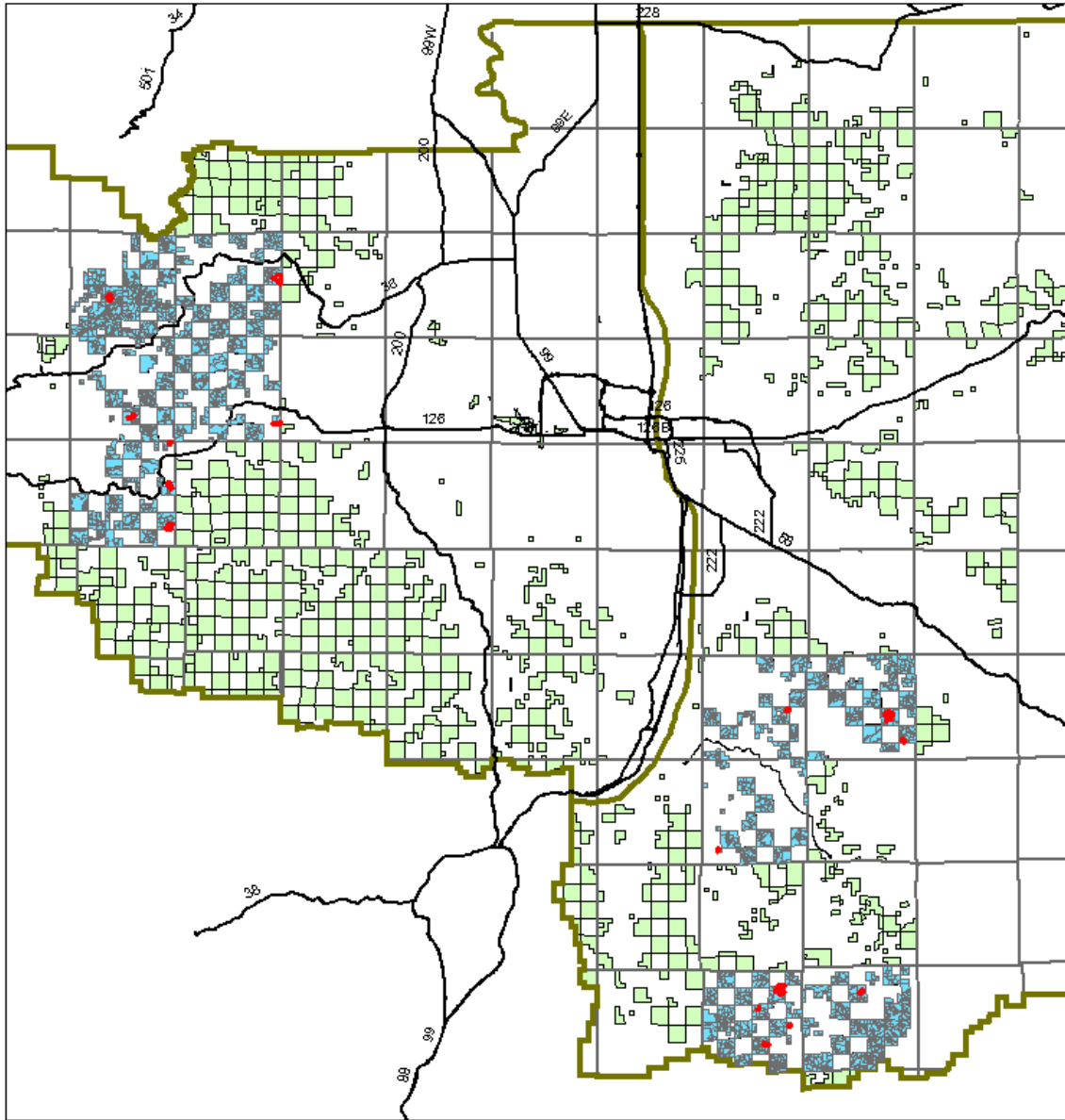
The three survey visits over the course of the season for each unit appeared to be of somewhat marginal utility for the purpose of finding a large number of sites, and the minimum of two visits specified by the fungi protocol would have been sufficient. Not only was only one site found in the final visit, many sites were locatable for more than one visit. If a single visit had occurred during the period Nov. 12-Dec. 4, probably 37 sites could have been found; 74% of the total sites with relocation data. Another way to look at this is to consider that only 1 site was newly discovered on the last visit, and only 12 sites were found on the first visit that were not still identifiable on the second visit; therefore if only the second visit occurred, only 13 sites (26%) would have not been located. A single, well-timed visit would have been sufficient to find most sites. Nevertheless, the results are specific to this area and this season. The fall 2010 season was highly productive, probably due to early rainstorms, but had some fairly early snowstorms. Different results may occur where the season is of a greater or lesser duration based on weather conditions.

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.

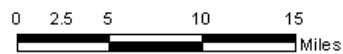
Acknowledgments

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- 2010 Selected Units
- Study Area Units
- Highways
- RA Boundaries
- Townships
- BLM Ownership

**Attachment 1: 2010 Fungi Survey Units
Upper Willamette and Siuslaw Resource Areas
Eugene District BLM**



1:500,000 NAD 1983 Con US



Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Albatrellus avellaneus</i>	<u>Sensitive</u> ORNHIC List 1	CA, WA, Coos Co.	S	E	Nov, Jan
<i>Albatrellus caeruleoporus</i>	<u>Strategic</u> ORNHIC List 3	BC to CA, Eastern N.A., NS: Lane Co.	S	E	Sept-Dec.
<i>Albatrellus ellisii</i>	ORNHIC List 4	CA, WA, ID, NS: Douglas and Linn Co.	S	E	Forests. Oct-Jan
<i>Amanita novinupta</i>	<u>Strategic</u> ORNHIC List 3	BC to ID, CA, NS: Lane Co.	S	E	
<i>Arcangiella camphorata</i>	<u>Sensitive</u> ORNHIC 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.
<i>Balsamia alba</i>	<u>Strategic</u> ORNHIC List 3	OR, CA. Columbia and Douglas Co. in Coast Ranges.	S	H	
<i>Balsamia nigrans</i> (= <i>B. nigrescens</i>)	<u>Strategic</u> ORNHIC List 3	CA to Benton Co.	S	H	Mar, Jun, Oct, Dec
<i>Boletus pulcherrimus</i>	<u>Sensitive</u> ORNHIC List 1	WA to CA, NS: Lane Co.	S	E	Possibly documented, but no site report available. July-Dec.
<i>Boletus regius</i>	ORNHIC List 3	NS: UW RA	D	E	
<i>Bondarzewia mesenterica</i> (= <i>B. montana</i>)	Eugene District <u>Review</u>	BC to nCA, Europe; NS: UW RA	D	E	Late successional conifer forests, often associated with stumps or snags; fruits from August to December.
<i>Catathelasma ventricosum</i>	ORNHIC List 3	BC to CA, NS: Linn Co.	S	E	Forests, especially Picea and Abies. Sep-Jan.
<i>Chamonixia caespitosa</i>	<u>Sensitive</u> ORNHIC List 2	WA to CA, NY, Europe. NS: Lincoln and Tillamook Co.	S	H	Jun-Nov
<i>Choiromyces alveolatus</i>	<u>Strategic</u> ORNHIC List 3	Western Cascades; NS: Linn, Douglas Cos.	S	H	May-Jul, Sept-Nov
<i>Choiromyces venosus</i>	<u>Sensitive</u> ORNHIC 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.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Chrysomphalina grossula</i>	<u>Strategic</u> ORNHIC 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>	<u>Strategic</u> ORNHIC List 3	WA to ID, CA, NS: Douglas Co.	S	E	Mixed conifers. Oct-Dec.
<i>Clavulina castanopes</i> var. <i>lignicola</i>	<u>Strategic</u> ORNHIC List 3	BC to CA, NS: Lane Co.	S	E	May, Oct, Nov.
<i>Clitocybe senilis</i>	ORNHIC List 3	WA, Tillamook Co. E N.A., Europe.	S	E	Jul, Aug, Nov, Dec
<i>Conocybe subnuda</i>	<u>Strategic</u> ORNHIC List 3	OR, Europe. NS: Multnomah Co.	S	E	
<i>Cordyceps ophioglossoides</i>	ORNHIC 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> ORNHIC List 2	WA to CA, NS: Douglas Co.	S	E	Coastal to montane conifer forests. Sep-Nov.
<i>Cortinarius cyanites</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Benton Co.	S	E	Forests. Aug-Nov.
<i>Cortinarius depauperatus</i>	<u>Strategic</u> ORNHIC 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>	ORNHIC 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>Cystangium idahoensis</i> (= <i>Martellia i.</i>)	<u>Sensitive</u> ORNHIC 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> ORNHIC List 3	WA to CA, E N.A., Europe. NS: Lane Co.	S	E	Forests, on remains of other mushrooms or leaf mulch. Feb, Aug, Sep-Dec.
<i>Dermocybe humboldtensis</i>	<u>Sensitive</u> ORNHIC List 1	CA, OR, NS: Douglas Co.	S	E	Nov.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Destuntzia fusca</i>	<u>Strategic</u> ORNHIC 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>Elaphomyces asperulus</i>	<u>Strategic</u> ORNHIC List 3	OR, Europe. NS: Polk Co.	S	H	
<i>Elaphomyces decipiens</i>	<u>Strategic</u> ORNHIC List 3	OR, CA, LA, MS, Europe. NS: Benton Co.	S	H	
<i>Elaphomyces reticulatus</i>	<u>Strategic</u> ORNHIC List 3	OR, Eurasia. NS: Lane Co.	S	H	
<i>Endogone oregonensis</i>	<u>Strategic</u> ORNHIC List 3	OR. NS: Douglas and Benton Co.	S	H	Feb, Jul, Sep-Nov.
<i>Galerina fuscobrunnea</i>	<u>Strategic</u> ORNHIC List 3	OR. NS: Cascades in Wasco Co.	S	E	
<i>Gautieria magnicellaris</i>	ORNHIC List 3	OR, CA, E N.A., Mex., Europe, NS: Deschutes Co.	S	H	July-Oct
<i>Gelatinodiscus flavidus</i>	ORNHIC List 4	Endemic to OR, WA. NS: Lane Co., Willamette National Forest.	S	E	Forms scattered to gregarious sporocarps on cones, twigs and foliage of <i>Chamaecyparis nootkatensis</i> near or under melting snowbanks. Apr-Sep, Nov-Dec.
<i>Genea compacta</i>	<u>Strategic</u> ORNHIC List 3	Polk Co., Willamette Valley, to Mexico.	S	H	
<i>Gomphus kauffmanii</i>	<u>Sensitive</u> ORNHIC List 3	BC to ID, CA, NS: Lane Co.	S	E	<i>Pinus</i> and <i>Abies</i> . Aug-Dec, Jan.
<i>Gymnomyces monosporus</i>	<u>Strategic</u> ORNHIC List 3	Benton Co.	S	H	Jun, Jul
<i>Gymnomyces nondistincta</i>	<u>Strategic</u> ORNHIC List 1	Clackamas Co.	S	H	Oct

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Gymnopilus punctifolius</i>	<u>Eugene District Review</u>	WA to n CA; NS: SI RA	D	E	Fruits on well decayed (brown cubically rotted) large conifer stumps and snags; fruits Apr, Jun, August to December. Dropped by ORNHIC.
<i>Hebeloma occidentale</i>	<u>Strategic</u> ORNHIC List 3	Clackamas, Wasco Co.	S	E	
<i>Helvella crassitunicata</i>	<u>Sensitive</u> ORNHIC 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.
<i>Helvella elastica</i>	ORNHIC 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> ORNHIC List 3	Europe, Lane Co.	S	E	
<i>Hydropus marginellus</i>	<u>Strategic</u> ORNHIC List 3	WA to CA. NS: Marion Co.	S	E	Conifer wood, <i>Abies</i> , <i>Pinus</i> . Jun-Dec.
<i>Hygrophorus albicarneus</i>	<u>Strategic</u> ORNHIC List 3	OR. NS: Lane Co.	S	E	
<i>Hygrophorus albiflavus</i>	<u>Strategic</u> ORNHIC List 3	Clackamas Co.	S	E	
<i>Hypomyces luteovirens</i>	ORNHIC List 3	BC to CA. NS: Clackamas Co.	S	E	State Rank S3, so not included on Strategic list. Parasitic on Russulaceae. Sep, Oct.
<i>Leptonia caesiocincta</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, Europe. NS: Clackamas Co.	S	E	
<i>Leptonia occidentalis var. occidentalis</i>	<u>Strategic</u> ORNHIC List 1-X	Benton, Marion Cos.	S	E	Nov.
<i>Leptonia rosea var. marginata</i>	<u>Strategic</u> ORNHIC List 2-ex	WA to CA, NS: Lane Co.	S	E	

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Leucogaster citrinus</i>	ORNHIC List 3	Pacific Northwest endemic.CA, OR, WA.NS: SI RA.	D	H	Associated with the roots of ABCO, ABLA, PICO, PIMO, PSME, TSHE from 280 to 2000 m elevation. Jun, Aug-Dec.
<i>Leucogaster microsporus</i>	ORNHIC List 4	WA to CA, NS: Lane Co.	S	H	Jul-Nov
<i>Leucogaster odoratus</i>	<u>Strategic</u> ORNHIC List 3	CA to Lane, Linn Cos.	S	H	
<i>Lyophyllum acutipes</i>	<u>Strategic</u> ORNHIC List 1-X	Clackamas Co.	S	E	
<i>Lyophyllum furfurellum</i>	<u>Strategic</u> ORNHIC List 1-X	Clackamas Co.	S	E	
<i>Lyophyllum lubricum</i>	<u>Strategic</u> ORNHIC List 1-X	Clackamas Co.	S	E	
<i>Lyophyllum pallidum</i>	<u>Strategic</u> ORNHIC List 1-X	West Cascades of Jefferson Co.	S	E	
<i>Lyophyllum soldipes</i>	<u>Strategic</u> ORNHIC List 1-X	Clackamas Co.	S	E	
<i>Martellia medlockii</i>	<u>Strategic</u> ORNHIC List 3	Linn Co.	S	H	
<i>Mycena gaultheri</i>	<u>Strategic</u> ORNHIC List 3	Clackamas Co.	S	E	
<i>Mycena hudsoniana</i>	<u>Strategic</u> ORNHIC List 3	WA and Lane Co.	S	E	Apr-Jul
<i>Mycena quinaultensis</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Lane Co.	S	E	Oct-Dec
<i>Mycena tenax</i>	<u>Strategic</u> ORNHIC 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> ORNHIC 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> ORNHIC List 3	Lincoln Co.	S	E	

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Octavianina macrospora</i>	<u>Strategic</u> ORNHIC List 1-X	Clackamas Co.	S	H	
<i>Omphalina isabellina</i>	<u>Strategic</u> ORNHIC List 3	Clackamas Co.	S	E	
<i>Otidea smithii</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Benton Co.	S	E	Nov, Dec, Feb.
<i>Phaeocollybia attenuata</i>	ORNHIC List 4	WA to CA, NS: Lane Co. NS: UW RA, SI RA	D	E	Under conifers such as <i>Picea sitchensis</i> , but also inland. Apr, Sept-Jan.
<i>Phaeocollybia californica</i>	<u>Sensitive</u> ORNHIC List 1	WA to CA, NS: Lane Co. NS: UW RA	D	E	Apr-Jun, Sep-Jan.
<i>Phaeocollybia dissiliens</i>	<u>Strategic</u> ORNHIC List 3	OR, NS: Lane Co. NS: UW, SI	D	E	Sept-Dec.
<i>Phaeocollybia gregaria</i>	<u>Sensitive</u> ORNHIC List 1	Polk, Tillamook Cos.	S	E	Oct-Dec.
<i>Phaeocollybia lilacifolia</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Lincoln Co.	S	E	Oct.
<i>Phaeocollybia oregonensis</i>	<u>Sensitive</u> ORNHIC List 1	BC to OR, NS: Clackamas and Coos Cos. NS: SI RA	D	E	Aug, Oct, Nov.
<i>Phaeocollybia piceae</i>	ORNHIC List 4	WA to CA, NS: SI RA	D	E	Apr, Sept-Dec.
<i>Phaeocollybia pseudofestiva</i>	<u>Strategic</u> ORNHIC List 3	BC to CA, NS: Lane Co.	S	E	Mature mixed conifers and hardwoods. May, July, Sept-Jan.
<i>Phaeocollybia radicata</i>	<u>Strategic</u> ORNHIC List 3	OR, CA, NS: SI RA	D	E	Conifer forest, PSME, GASH, POMU. Oct-Dec.
<i>Phaeocollybia scatesiae</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Lane Co.	S	E	Sept-Dec.
<i>Phaeocollybia sipei</i>	<u>Strategic</u> ORNHIC List 3	OR, NS: Lane Co. NS: UW RA, SI RA	D	E	Oct-Jan
<i>Phaeocollybia spadicea</i>	ORNHIC List 3	WA to CA, NS: Lane Co. NS: UW RA, SI RA	D	E	Coastal Sitka spruce, but also inland e.g., near Eugene. May, Sept-Jan.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Pithya vulgaris</i>	<u>Eugene District Review</u>	OR, WA. NS: Linn Co., Willamette NF, H.J. Andrews Experimental Forest	S	E	Saprophyte or needle endophyte on wet, dead, usually detached branch tips of <i>Abies</i> and <i>Sequoia</i> , in montane areas, often near snowbanks. Nov., Jan-Jul.
<i>Podostroma alutaceum</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, NS: Lane Co.	S	E	Conifer forests. Apr, Jul-Dec.
<i>Polyozellus multiplex</i>	ORNHIC List 4	WA to CA, ID, E N.A., Japan, NS: Lane Co.	S	E	Aug-Jan.
<i>Pseudoaleuria quinaultiana</i>	<u>Strategic ORNHIC List 3</u>	WA to OR, NS: Lincoln Co.	S	E	March-May, Sept.
<i>Pseudorhizina californica</i> (= <i>Gyromitra c.</i>)	<u>Sensitive ORNHIC List 2</u>	BC to CA, ID, NS: Linn Co., Douglas Co.	S	E	Well-rotted stumps or logs of conifers. Apr-Oct.
<i>Ramaria abietina</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, ID, Eurasia, NS: Lane Co.	S	E	Conifer forests. Aug-Dec., Jan-Mar.
<i>Ramaria amyloidea</i>	<u>Sensitive ORNHIC List 2</u>	WA to CA, NS: Lane Co.	S	E	Jul-Nov.
<i>Ramaria aurantiisiccescens</i>	ORNHIC List 4	WA to CA, NS: Lane Co. NS: UW RA	D	E	Sept-Jan.
<i>Ramaria botrytis var. aurantiiramosa</i>	<u>Strategic ORNHIC List 3</u>	WA to OR, NS: Douglas Co.	S	E	Sept-Nov.
<i>Ramaria concolor f. tsugina</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, ID, NS: Coos Co.	S	E	Margins of bogs among mosses, or on wet soil under conifers and alders. Sept-Oct.
<i>Ramaria conjunctipes var. sparsiramosa</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, NS: SI RA	D	E	Oct-Dec.
<i>Ramaria gelatinaurantia</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, NS: Clackamas Co.	S	E	Sept-Jan
<i>Ramaria gracilis</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, NY, Europe, NS: Benton Co.	S	E	Sept, Nov, Dec.
<i>Ramaria largentii</i>	<u>Strategic ORNHIC List 3</u>	WA to CA, NS: Benton Co.	S	E	Mar, Jun, Sept-Nov.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Ramaria maculatipes</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Lane Co.	S	E	Sept-Dec.
<i>Ramaria rainierensis</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, ID, NS: Coos Co.	S	E	Mar, Dec.
<i>Ramaria rubella var. blanda</i>	<u>Sensitive</u> ORNHIC List 2	BC to CA, TN, NS: Lane Co.	S	E	Oct, Nov.
<i>Ramaria rubribrunnescens</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Douglas Co.	S	E	Sept-Nov
<i>Ramaria spinulosa var. diminutiva</i>	<u>Sensitive</u> ORNHIC List 1	WA to CA, NS: Douglas Co.	S	E	Possibly documented, but no site report available. Oct.
<i>Ramaria stuntzii</i>	<u>Eugene District Review</u>	WA to n CA; NS: UW RA, SI RA	D	E	Growing under <i>Tsuga heterophylla</i> . Aug-Dec.
<i>Ramaria suecica</i>	<u>Strategic</u> ORNHIC List 3	BC to CA, NS: SI RA	D	E	On litter. Oct, Nov.
<i>Rhizopogon abietis</i>	<u>Strategic</u> ORNHIC List 3	CA, OR, ID, WY, E N.A. NS: Lane Co.	S	H	July-Dec.
<i>Rhizopogon atroviolaceus</i>	<u>Strategic</u> ORNHIC List 3	OR, ID, NS: Lane Co.	S	H	May-Oct.
<i>Rhizopogon brunneiniger</i>	<u>Strategic</u> ORNHIC List 3	OR, CA, NS: Benton Co.	S	H	Jun, Sept-Nov.
<i>Rhizopogon chamaleontinus</i>	<u>Sensitive</u> ORNHIC List 2	OR, ID, NS: Josephine Co.	S	H	Jun, Sept.
<i>Rhizopogon clavitisporus</i>	<u>Strategic</u> ORNHIC List 2	CR Lincoln Co., Cascades Clackamas Co., south to Klamath Ranges, ID	S	H	
<i>Rhizopogon ellipsosporus</i>	<u>Sensitive</u> ORNHIC List 2	OR, CA, Jackson, Josephine Co.	S	H	Apr, Oct-Jan.
<i>Rhizopogon exiguus</i>	<u>Sensitive</u> ORNHIC List 2	Endemic to OR, WA. NS: Lane Co.	S	H	Associated with the roots of <i>Pseudotsuga menziesii</i> and <i>Tsuga heterophylla</i> at 950 m elevation. Mar, Sept, Nov.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Rhizopogon flavofibrillosus</i>	<u>Strategic</u> ORNHIC 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> ORNHIC List 2	OR, ID, NS: Linn Co.	S	H	Sept, Oct.
<i>Rhizopogon subcinnamomeus</i>	<u>Strategic</u> ORNHIC List 3	OR, ID, NS: Benton and Linn Cos.	S	H	
<i>Rhizopogon subclavitisporus</i>	<u>Strategic</u> ORNHIC List 3	OR, ID, NS: Lane Co.	S	H	
<i>Rhizopogon subradicatus</i>	<u>Strategic</u> ORNHIC List 2-ex	WA, OR, NS: Benton Co.	S	H	
<i>Rhizopogon truncatus</i>	ORNHIC List 4	OR, CA, E N.A., NS: Lane Co.	S	H	Jan, Apr-Dec.
<i>Rickenella swartzii</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, MT, Europe, NS: Lane Co.	S	E	May, Jun, Aug-Jan.
<i>Sarcodon fuscoindicus</i>	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: SI RA	D	E	Sept-Jan.
<i>Sowerbyella rhenana</i> (= <i>Aleuria rhenana</i>)	ORNHIC 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. One collection was noted to occur under <i>Lithocarpus sp.</i> May, Jul, Sept-Jan.
<i>Stephensia bynumii</i>	<u>Strategic</u> ORNHIC List 3	Clackamas, Marion Cos.	S	H	
<i>Stropharia albovelata</i> (= <i>Pholiota a.</i>)	<u>Strategic</u> ORNHIC List 3	WA to CA, NS: Lane Co.	S	E	May, Aug-Dec.
<i>Tuber asa</i>	<u>Strategic</u> ORNHIC List 3	OR, E N.A., Europe, NS: Benton Co.	S	H	Jan, Oct.
<i>Tuber pacificum</i>	<u>Strategic</u> ORNHIC List 3	Coos, Lane and Polk Co.	S	H	Feb, Jun, Jul.

Species	Status	Range/Nearest Site	D/S	H/E	Habitat and Season
<i>Urnula craterium</i>	Strategic ORNHIC List 2-ex	OR, E N.A., Eurasia. NS: Benton Co.	S	E	
<i>Vibrissea truncorum</i>	ORNHIC List 3	NS: SI RA.	D	E	

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. ORNHIC=Oregon Natural Heritage Information Center

NS=Nearest site UW=Upper Willamette Resource Area SI=Siuslaw Resource Area

ORNHIC List 1 contains taxa that are threatened with extinction or presumed to be extinct throughout their entire range.

ORNHIC List 2 contains taxa that are threatened with extirpation or presumed extirpated from the state of Oregon.

ORNHIC 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.

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