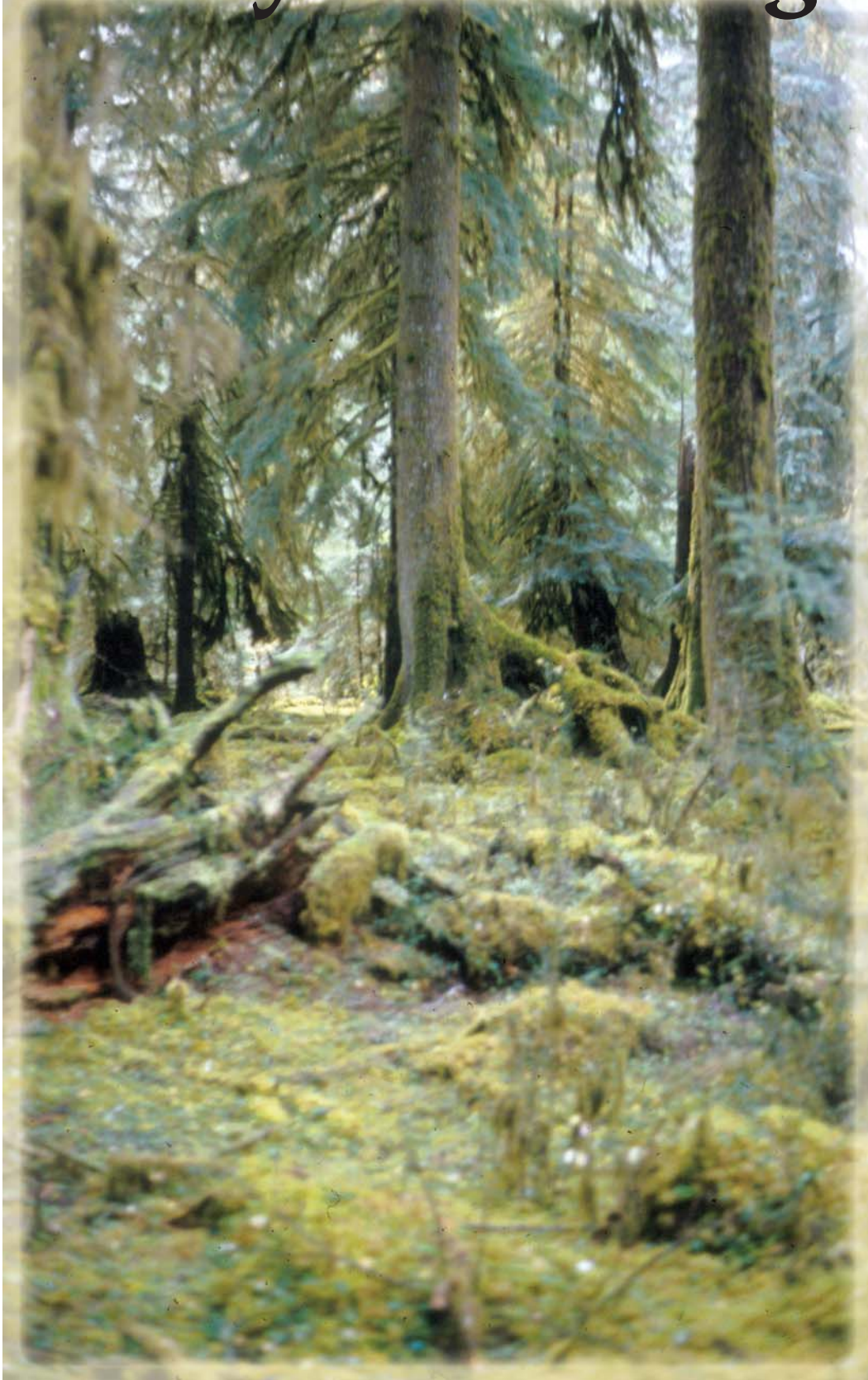


Survey and Manage



**Fiscal
Year
2002
Annual
Status
Report**

**Northwest
Forest
Plan**





Overview (Executive Summary)

Survey and Manage species are a group of rare and uncommon species protected by the Northwest Forest Plan.

It includes 317 species of mollusks, lichens, bryophytes, vascular plants, amphibians, fungi, the Oregon Red Tree Vole, the Great Gray Owl and arthropods.

This Annual Status Report chronicles the work products and management direction of the Survey and Manage Program during Fiscal Year 02 (FY02). Agency executives, management and staff worked together to prioritize this year's work plans.

Program efforts focused on helping field managers implement forest projects while simultaneously attending to the informational and biological needs of species in the Northwest Forest Plan (NWFP) area. The following significant advances were made in the program in FY02:

Strategic survey efforts continued with random grid surveys, purposive surveys, known site surveys and species research. Random grid surveys conducted throughout the NWFP area were approximately 90% complete at the end of FY02;

Management Recommendations were specifically revised to expedite implementation of the National Fire Plan;

The Annual Species Review removed 37 species from the requirements of Survey and Manage by utilizing new information and analysis;

Exceptions provided by the Survey and Manage 2001 Record of Decision¹ (2001 ROD) to release known sites of some uncommon species were utilized to help field units accomplish on-the-ground projects;

These and other accomplishments of the interagency Survey and Manage program will be discussed in detail on the following pages.

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Cover photo: Courtesy of Rob Huff

¹ 2001 ROD USDA Forest Service and USDI Bureau of Land Management. 2001. Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines. Portland, Oregon. var.p. [ROD ii + 59 p; S&Gs ii+86 p]

Background



In the *1994 Record of Decision*² (*1994 ROD*), the Bureau of Land Management and Forest Service adopted Standards and Guidelines (S&Gs) for the management of habitat for late-successional and old-growth forest-related species within the range of the northern spotted owl.

One of the mitigation measures adopted under the *1994 ROD* called “Survey and Manage,” addressed concerns for the persistence of rare and little-known species by providing for management of known sites, site-specific pre-habitat-disturbing surveys, and/or landscape scale surveys for about 400 rare and/or uncommon species.

As we discovered more about the occurrences and biological needs of these species, primarily through surveys, the agencies decided the original S&Gs needed improvement. This led to the preparation of the *2001 ROD* which was signed by the Secretaries of Interior and Agriculture in January 2001.

This decision removed 72 species from the Survey and Manage list in all or part of their ranges, established an Annual Species Review process to evaluate new information about taxa and make appropriate changes to their management, and required strategic surveys across the landscape for all species.

It also created six management categories for 346 species, based on the ability to detect them in surveys, and whether they are rare or uncommon.

Although the S&Gs were revised, the *2001 ROD* maintains the same likelihood of persistence for Survey and Manage species as the *1994 ROD*, while allowing more management flexibility to provide for the needs of the species.

In 2001-02, the Survey and Manage provisions were the subject of a lawsuit brought by Douglas Timber Operators, the American Forest Resources Council and the Association of O&C Counties against the Secretaries of Interior and Agriculture.

In response to that lawsuit, the agencies entered a settlement agreement in late September, 2002, to prepare a Supplemental Environmental Impact Statement (SEIS) that would consider eliminating the Survey and Manage mitigation measure.



This action set in motion a concentrated effort to complete the SEIS involving many agency people, including the Survey and Manage staff. However, the agencies expect to continue full implementation of the *2001 ROD* S&Gs until a new SEIS/Record of Decision is completed.

² 1994 ROD USDA Forest Service and USDI Bureau of Land Management. 1994b. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl, Standards and Guidelines for Management of Habitat for Late-successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl. Portland, Oregon. var. p. [Northwest Forest Plan].



Pre-Disturbance Surveys

Pre-disturbance surveys are “clearance surveys” conducted for projects that may disturb species habitats. They are conducted prior to signing National Environmental Policy Act of 1969 (NEPA) decisions and have the goal of reducing the potential loss of sites by searching specified habitats.

Pre-disturbance surveys utilize a variety of survey methods to focus on priority habitats, habitat features, or entire project areas. These surveys must adhere to protocols developed for individual species.

There are two types of pre-disturbance surveys based on individual species characteristics. *Practical surveys* are developed for species that have characteristics making them likely to be located with a reasonable survey effort. Practical surveys were limited to 64 species in FY02.

Equivalent-effort surveys are developed for species that have characteristics, such as extremely small

size or irregular life cycles, making identification during pre-disturbance surveys less likely. Equivalent-effort surveys are currently limited to 8 species of mollusks.

Information collected during pre-disturbance surveys includes detailed location and habitat data. These data, along with information collected from Strategic Surveys, are used to develop or revise management recommendations, revise survey protocols and complete the Annual Species Review.

According to the Interagency Species Management System (ISMS) database, field offices recorded surveys on 432,599 acres in 2002. Administrative units also recorded a total of 6,510 known sites in the ISMS database in 2002 for 192 different taxa.

Table 1 displays the total number of known sites recorded in 2002 and entered into the ISMS database for both the Forest Service and Bureau of Land Management.

Table 1. Known Sites Recorded in FY2002

Taxa Group	Forest Service		BLM	
	R5	R6	CA	OR/WA
Fungi	59	588	22	929
Lichens	27	275	3	769
Bryophytes	24	191	0	80
Vascular Plants	76	331	0	321
Mollusks	893	730	0	321
Amphibians	28	35	0	2
Great Gray Owl	0	22	0	46
Red Tree Vole	7	275	0	676
Total	1114	2447	25	2949

Survey Protocols

A survey protocol for 8 species of lichens was released this past year (*Bryoria tortuosa*, *Leptogium cyanescens* *Lobaria oregana*, *Niebla cephalota*, *Platismatia lacunosa*, *Ramalina thrausta*, *Teloschites flavicans*, *Usnea longissima*). Seven of these 8 species were moved into Category A in the 2001 ROD, with one species, *Platismatia lacunosa*, moved to Category C. Previously, surveys were not considered practical.

In addition, the Red Tree Vole Survey Protocol was revised (Version 2.1) due to recent information collected on the species from pre-project and strategic surveys as well as the need to clarify direction regarding survey requirements as identified in the S&M ROD.

Both of these documents may be accessed via the internet at www.or.blm.gov/surveyandmanage.



What are Strategic Surveys?

Strategic surveys gather information on Survey and Manage species, through field surveys and research projects, that relate to the information needs and the management objectives for each species. Strategic surveys can help answer the following questions:

- ▶ Is the species rare or uncommon?
- ▶ Is there a concern for species persistence?
- ▶ Is the species closely associated with late-successional/old-growth habitats?
- ▶ Do the reserve land use allocations and other standard and guidelines provide for a reasonable assurance of species persistence?

Strategic surveys range in scale from small-scale, site-specific surveys that collect habitat data at known species locations, to large-scale multiple species surveys that collect information about species distribution and abundance.

Types of Strategic Surveys

Current strategic survey efforts include:

- ▶ Surveys for fungi, lichens, bryophytes, mollusks, vascular plants and red tree vole on randomly selected Current Vegetation Survey/Forest Inventory Assessment (CVS/FIA) plots;
- ▶ Known site surveys that collect habitat data at known locations of Survey and Manage species;

- ▶ Purposive surveys conducted in high likely habitats with the objective of locating additional species locations;
- ▶ Habitat modeling using a variety of methods to develop habitat maps; and
- ▶ Species-specific surveys for those species that require different survey methods.

FY02 Strategic Survey Accomplishments

Strategic Survey accomplishments in FY02 continued to collect information about Survey and Manage species and their habitats. This information is critical to the Annual Species Review and development of management recommendations and survey protocols because it provides a basis for changes in species management.

Following is a brief summary of what was accomplished by each survey type.

*During 2002 strategic surveys, Judy Harpel, bryophyte taxa expert, discovered a new tree substrate (habitat) for the bryophyte *Iwatskiella leucotricha*. This location also resulted in a range extension for the species.*

New information such as this is critical to determining if changes in species management are necessary.

Revisions of Management Recommendations, Survey Protocols and the Annual Species Review analyses all depend on strategic survey information.



Strategic Surveys (cont.)

CVS/FIA Random Grid Survey³

This survey began in 2000 on three pilot areas (Gifford Pinchot, Umpqua, and Siuslaw National Forests) on 300 randomly selected CVS plots. In 2001 surveys were initiated throughout the Northwest Forest Plan on an additional 300 CVS plots in Oregon and 150 FIA plots in California. In addition, Red Tree Vole surveys were initiated on 400 CVS/FIA plots.

In fiscal year 2002 a total of 1,001 fall and spring fungi visits, 334 spring and fall mollusk visits, and 59 botanical visits were completed. In addition, red tree vole surveys were completed on 186 CVS/FIA plots.

Figure 1 shows the number of visits completed and the total number of surveys needed for completion for this regional survey effort. The surveys for this project will be completed in spring 2003 with specimen identification and data analysis to follow.

Future analysis will estimate the number of species locations across the Northwest Forest Plan area and species associations within matrix and reserve land use allocations.

At this time over 2,000 detections of Survey and Manage species (including those that have been removed from Survey and Manage) totaling 159 species have been made.

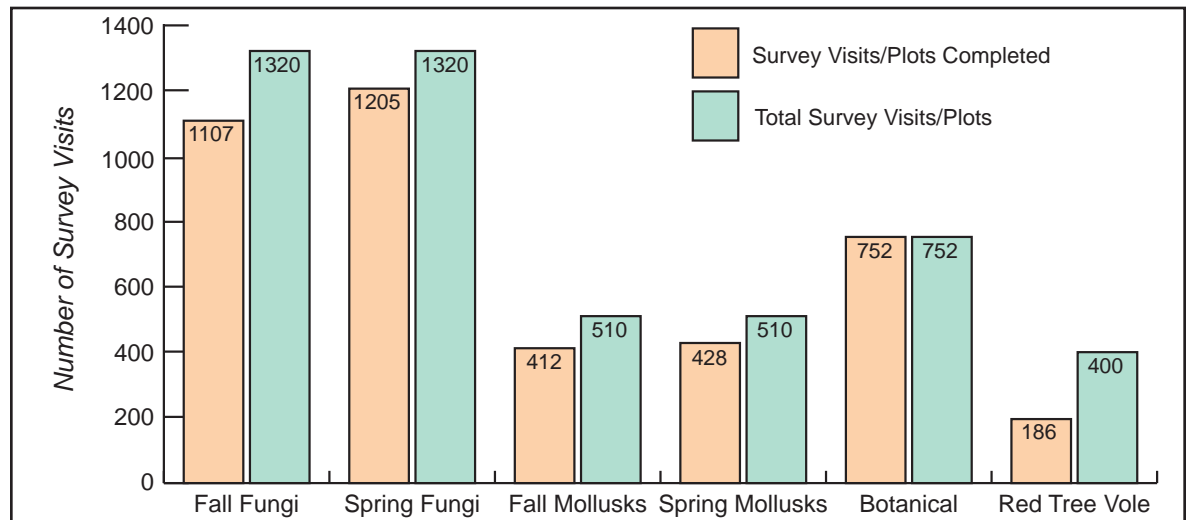
Table 2 shows the number of species and detections by taxa group resulting from the FY02 random grid surveys. Several species that were previously known from less than five sites have been located on the random grid survey. For example, the fungi *Cortinarius barlowensis*, with no known sites in the Northwest Forest Plan area prior to strategic surveys, has been detected on 17 CVS plots in Oregon and Washington.

Table 2. Number of Species and Locations by Taxa Group

Taxa Group	# Species*	# Detections*
Fungi	92	650
Mollusks	8	42
Lichens	47	1172
Bryophytes	10	421
Vascular Plants	2	3
Red Tree Vole	1	68
TOTALS	160	2356

* includes both current and former Survey and Manage species

Figure 1. Status of Random Grid Surveys



³ Current Vegetation Survey/Forest Inventory Assessment (CVS/FIA) plots are fixed plots maintained by the USFS/BLM to measure vegetation changes over time that represent the landscape.

At the end of FY02, 83.9% of Fall Fungi; 91.3% of Spring Fungi; 80.8% of Fall Mollusks; 83.9% of Spring Mollusks; 100% of botanicals (lichens, bryophytes and vascular plants); and 40.8% of Red Tree Vole surveys were complete.

Strategic Surveys (cont.)



Known Site Surveys

A total of 219 known site surveys were completed for 29 Survey and Manage species (Tables 3 and 4). These surveys collect detailed microsite and vegetation data that can be used to focus strategic surveys and develop potential habitat maps.

Table 3. Known Site Surveys by Taxa Group

Taxa Group	# Species	# Surveys
Fungi	11	50
Lichens	8	30
Bryophytes	5	36
Vascular Plants	2	3
Mollusks	3	100
TOTAL	29	219

Table 4. Known Site Survey by Species

Species Name	Taxa Group	Admin Units Where Surveys Occurred	KSS Completed
<i>Botrychium minganense</i>	Vasc. Plant	MTH	1
<i>Dendroscopula intricatum</i>	Lichen	MTH	1
<i>Gyromitra californica</i>	Fungi	MTH	3
<i>Gelatinodiscus flavida</i>	Fungi	MTH	1
<i>Hypogymnia duplicata</i>	Lichen	MTH	9
<i>Mycena overholtsii</i>	Fungi	MTH, WEN/OKA, UMP	27
<i>Nephroma occultum</i>	Lichen	MTH, UMP	10
<i>Pseudocyphellaria rainierensis</i>	Lichen	MTH	3
<i>Ramaria rubripermanens</i>	Fungi	MTH	1
<i>Rhizomnium nudum</i>	Bryophyte	MTH, WEN/OKA	5
<i>Schistostega pennata</i>	Bryophyte	MTH, WEN/OKA, UMP	21
<i>Gomphus clavatus</i>	Fungi	UMP	2
<i>Gomphus kauffmanii</i>	Fungi	UMP	1
<i>Nivatogastrium nubigenum</i>	Fungi	UMP	3
<i>Peltigera pacifica</i>	Lichen	UMP	2
<i>Ramaria amyloidea</i>	Fungi	UMP	2
<i>Ramaria rubrievanescens</i>	Fungi	UMP	3
<i>Sparassis crispa</i>	Fungi	UMP	1
<i>Tritomaria exsectiformis</i>	Bryophyte	UMP	2
<i>Pristiloma arcticum crateris</i>	Mollusk	UMP	2
<i>Hemphillia malonei</i>	Mollusk	MTH, GP	64
<i>Monadenia fidelis minor</i>	Mollusk	MTH	34
<i>Lobaria linita</i>	Lichen	WEN/OKA	1
<i>Botrychium montanum</i>	Vasc. Plant	WEN/OKA	1
<i>Tritomaria quinqueidentata</i>	Bryophyte	WEN/OKA	2
<i>Polyozellus multiplex</i>	Fungi	WEN/OKA	6
<i>Platismatia lacunosa</i>	Lichen	Coos Bay	2
<i>Ramalina thrausta</i>	Lichen	Coos Bay	2
<i>Diplophyllum plicatum</i>	Bryophyte	Coos Bay	6



Strategic Surveys (cont.)

Purposive Surveys

This survey type was used more in fiscal year 2002 than in previous years. A total of 97 species were surveyed for over approximately 17,000 acres with a total of 369 new locations found. Agency botanists and biologists conducted these surveys. Table 5 provides a summary of purposive survey information. Table 6 provides a complete list of the number of acres surveyed and the number of locations found for each species.

Table 5. Summary of Purposive Surveys

Taxa Group	No. Species Surveyed	Acres Surveyed	Number of Locations
Fungi	66	5200	150
Lichens	10	6410	62
Bryophytes	15	5050	145
Mollusks	4	157	7
Vascular Plants	2	125	1
TOTALS	97	16942	365

These surveys yielded some significant results:

➤ One of the two known historic locations of *Encalypta brevicolla* ssp. *crumiana* was relocated.

➤ One new location (previously known from only one site on the Willamette National Forest) of *Marsupella emarginata* var. *aquatica* was located on the Mount Baker-Snoqualmie National Forest

➤ 81 locations of *Ptilidium californicum* were located in northern California

➤ Two new locations (previously known from seven locations) of *Herbertus aduncus* were found in the Columbia River Gorge Scenic Area

➤ Six new locations (previously known from two locations) of *Iwatsukiella leucotricha* were found on the Olympic National Forest

➤ Over 50 new locations of rare fungi were documented.

A purposive survey was completed for Shasta salamanders on the Shasta-Trinity National Forest. This survey consisted of two parts with different objectives; 1) to provide additional distribution and habitat data within non-limestone habitat in the Green Mountain area of Shasta Lake, and 2) examine the northern extent of this species on federal lands and collect habitat data.

Under the first survey, transects covering approximately 30 miles

encompassing approximately 72 acres was surveyed with a total of 16 Shasta salamanders detected at 15 locations. This survey confirmed the presence of Shasta salamanders on non-limestone substrates.

The second survey yielded two new locations of Shasta salamanders with a range extension of this species 16 kilometers to the northeast.

In addition to the survey work that was conducted, a BLM contract was awarded to conduct purposive surveys for mollusks, bryophytes, lichens, vascular plants, and fungi on approximately 12,000 acres throughout the Northwest Forest Plan.

Strategic Surveys (cont.)



Table 6. Purposive Survey FY2002 Accomplishments

Species Name	Taxa Group	Acres Surveyed	# Locations Found	Species Name	Taxa Group	Acres Surveyed	# Locations Found
<i>Brotherella roellii</i>	Bryophyte	6	0	<i>Ramaria concolor</i> f. <i>marii</i>	Fungi	3571	0
<i>Buxbaumia viridis</i>	Bryophyte	100	1	<i>Ramaria concolor</i> f. <i>tsugina</i>	Fungi	3571	0
<i>Diplophyllum plicatum</i>	Bryophyte	80	2	<i>Ramaria conjunctipes</i> var <i>spariramosa</i>	Fungi	3571	2
<i>Diplophyllum albicans</i>	Bryophyte	560	16	<i>Ramaria coulteri</i>	Fungi	3571	0
<i>Encalypta brevicollis</i> ssp <i>crumiana</i>	Bryophyte	2	1	<i>Ramaria cyanigranosa</i>	Fungi	3571	0
<i>Herbertus aduncus</i>	Bryophyte	260	2	<i>Ramaria gelatiniaurantia</i>	Fungi	3571	5
<i>Iwatsukiella leucotricha</i>	Bryophyte	200	6	<i>Ramaria gracilis</i>	Fungi	3571	0
<i>Marsupella emarginata</i> var <i>aquatica</i>	Bryophyte	50	1	<i>Ramaria hilaris</i> var <i>olympiana</i>	Fungi	3571	0
<i>Ptilidium californicum</i>	Bryophyte	2625	81	<i>Ramaria largentii</i>	Fungi	3571	1
<i>Racomitrium aquaticum</i>	Bryophyte	225	9	<i>Ramaria lorithamnus</i>	Fungi	3571	0
<i>Rhizomnium nudum</i>	Bryophyte	2000	10	<i>Ramaria maculatipes</i>	Fungi	3571	0
<i>Schistostega pennata</i>	Bryophyte	2200	14	<i>Ramaria rainierensis</i>	Fungi	3571	0
<i>Tetraphis geniculata</i>	Bryophyte	600	0	<i>Ramaria rubella</i> var <i>blanda</i>	Fungi	3571	0
<i>Tritomaria exsectiformis</i>	Bryophyte	1500	0	<i>Ramaria rubribrunnescens</i>	Fungi	3571	0
<i>Tritomaria quinqueidentata</i>	Bryophyte	1500	2	<i>Ramaria rubrievanescens</i>	Fungi	3571	1
<i>Bridgeoporus nobillissimus</i>	Fungi	383	0	<i>Ramaria rubripermanens</i>	Fungi	4205	5
<i>Chromosera cyanophylla</i>	Fungi	1356	41	<i>Ramaria spinulosa</i> var <i>diminutiva</i>	Fungi	3571	0
<i>Collybia bakerensis</i>	Fungi	734	2	<i>Ramaria stuntzii</i>	Fungi	3571	3
<i>Cortinarius barlowensis</i>	Fungi	3571	1	<i>Ramaria suecica</i>	Fungi	3571	0
<i>Cortinarius boulderensis</i>	Fungi	3571	0	<i>Ramaria thiersii</i>	Fungi	3571	0
<i>Cortinarius cyanites</i>	Fungi	3571	0	<i>Ramaria verlotensis</i>	Fungi	3571	0
<i>Cortinarius depauperatus</i>	Fungi	3571	0	<i>Sarcosoma latahense</i>	Fungi	723	0
<i>Cortinarius magnivelatus</i>	Fungi	3571	0	<i>Tremiscus helvelloides</i>	Fungi	527	0
<i>Cortinarius olympianus</i>	Fungi	3571	3	<i>Gomphus clavatus</i>	Fungi	incidental	7
<i>Cortinarius speciosissimus</i>	Fungi	3571	0	<i>Sarcodon imbricatus</i>	Fungi	incidental	1
<i>Cortinarius tabularis</i>	Fungi	3571	0	<i>Clavariadelphus ligula</i>	Fungi	incidental	2
<i>Cortinarius umidicola</i>	Fungi	3571	0	<i>Clavariadelphus truncatus</i>	Fungi	incidental	5
<i>Cortinarius valgus</i>	Fungi	3571	0	<i>Clavariadelphus subfastigatus</i>	Fungi	incidental	1
<i>Cortinarius variipes</i>	Fungi	3571	0	<i>Craterellus tubaeformis</i>	Fungi	incidental	5
<i>Cortinarius verrucisporus</i>	Fungi	3571	0	<i>Nivatogastrium nubigenum</i>	Fungi	incidental	4
<i>Cortinarius wiebeae</i>	Fungi	3571	0	<i>Sparassis crispa</i>	Fungi	incidental	3
<i>Gelatinodiscus flavidus</i>	Fungi	94	2	<i>Bondarzewia mesenterica</i>	Fungi	incidental	2
<i>Gyromitra melaleucoides</i>	Fungi	700	1	<i>Tremiscus helvelloides</i>	Fungi	incidental	1
<i>Hydnum umbilicatum</i>	Fungi	616	14	<i>Otidea onotica</i>	Fungi	incidental	1
<i>Hydropus marginellus</i>	Fungi	690	0	<i>Clitocybe senilis</i>	Fungi	incidental	1
<i>Hygrophorus caeruleus</i>	Fungi	690	0	<i>Gymnopilus punctifolius</i>	Fungi	incidental	1
<i>Hygrophorus vernalis</i>	Fungi	637	0	<i>Clavariadelphus occidentalis</i>	Fungi	incidental	1
<i>Mycena hudsoniana</i>	Fungi	723	0	<i>Bryoria tortuosa</i>	Lichen	185	5
<i>Mycena overholtsii</i>	Fungi	723	11	<i>Dendroscopium intricatum</i>	Lichen	204	2
<i>Phaeocollybia attenuata</i>	Fungi	2371	2	<i>Hypogymnia duplicata</i>	Lichen	940	9
<i>Phaeocollybia californica</i>	Fungi	2371	0	<i>Lobaria linita</i>	Lichen	360	7
<i>Phaeocollybia dissiliens</i>	Fungi	2371	0	<i>Lobaria oregana</i>	Lichen	1182	5
<i>Phaeocollybia fallax</i>	Fungi	2371	3	<i>Nephroma occultum</i>	Lichen	845	1
<i>Phaeocollybia gregaria</i>	Fungi	2371	0	<i>Platismatia lacunosa</i>	Lichen	1010	7
<i>Phaeocollybia kauffmanii</i>	Fungi	2371	1	<i>Pseudocyphellaria rainierensis</i>	Lichen	1170	6
<i>Phaeocollybia olivacea</i>	Fungi	2371	0	<i>Ramalina thrausta</i>	Lichen	5	1
<i>Phaeocollybia oregonensis</i>	Fungi	2371	0	<i>Usnea longissima</i>	Lichen	1624	3
<i>Phaeocollybia piceae</i>	Fungi	2371	0	<i>Calicium glaucellum</i>	Lichen	260	4
<i>Phaeocollybia pseudofestiva</i>	Fungi	2371	0	<i>Calicium viride</i>	Lichen	260	3
<i>Phaeocollybia scatesiae</i>	Fungi	2371	1	<i>Chaenotheca brunneola</i>	Lichen	260	1
<i>Phaeocollybia sipei</i>	Fungi	2371	0	<i>Chaenotheca chrysocephala</i>	Lichen	260	4
<i>Phaeocollybia spadicea</i>	Fungi	2371	2	<i>Chaenotheca ferruginea</i>	Lichen	260	3
<i>Plectania milleri</i>	Fungi	791	0	<i>Chaenotheca furfuracea</i>	Lichen	260	1
<i>Ramaria abietina</i>	Fungi	3571	0	<i>Cryptomastix devia</i>	Mollusk	157	1
<i>Ramaria amyloidea</i>	Fungi	3571	2	<i>Hemphillia glandulosa</i>	Mollusk	157	2
<i>Ramaria araiospora</i>	Fungi	3571	5	<i>Hemphillia malonei</i>	Mollusk	157	4
<i>Ramaria aurantiisiccescens</i>	Fungi	3571	0	<i>Hemphillia pantherina</i>	Mollusk	157	0
<i>Ramaria botrytis</i> var <i>aurantiiramosa</i>	Fungi	3571	0	<i>Botrychium minganense</i>	Vascular Plant	120	1
<i>Ramaria celevirivrescens</i>	Fungi	3571	14	<i>Corydalis aqua-gelidae</i>	Vascular Plant	25	0
<i>Ramaria claviramulata</i>	Fungi	3571	0				

Note: Acres surveyed are not additive since the same area may have been surveyed for several species.



Strategic Surveys (cont.)

Habitat Modeling

Several modeling efforts for Survey and Manage species occurred in 2002. These include the Potential Natural Vegetation (PNV) modeling for lichens, bryophytes, vascular plants, red tree vole, mollusks, fungi and amphibians; a habitat model for lichens in the western Oregon Cascades, and modeling efforts using California strategic survey data for mollusks.

Modeling efforts using the PNV model occurred for several Survey and Manage species. The work included installing model validation plots for seven species in Washington, and expanding the potential habitat maps for several species to include southern Washington and northern Oregon.

The objective of the western Cascades lichen modeling effort was to develop models that estimate the occurrence for lichen species in the western Oregon Cascades. These models also have the potential to evaluate the response of lichen species to different land management scenarios.

Pacific Southwest Research Station developed models for several mollusk species to evaluate associations with land-use allocations, estimate their geographic ranges, describe habitat associations, and model presence-absence. These models used California strategic survey data from FIA plots collected in 1999 and 2000.

Species Specific Surveys

These surveys are for those species or species groups where the previous survey types may not be effective at gathering the specific information needs or those that require different survey methodologies. These survey efforts are described below:

Amphibians – Strategic survey efforts continued for Larch Mountain, Van Dyke and Siskiyou Mountains salamanders. Species range and habitat association maps are currently being developed for both Larch Mountain and Van Dyke salamanders.

Surveys for Siskiyou Mountains salamanders to assess distribution, abundance, and habitat on reserve land use allocations occurred throughout the species range. Salamanders were detected on only 7 of 33 plots sampled for this species.

Red Tree Vole – Survey work for red tree voles included: conducting a random grid survey, completing a study using spotted owl pellet analysis as a method to estimate abundance of red tree voles across the range; continuing an analysis of red tree vole genetics to determine if the species is subject to genetic isolation; and, initiating a radio telemetry study looking at the daily and seasonal movements of individual red tree voles that can be used to estimate the species home range.

Coastal Lichens – This survey looked at 16 lichen species (13 Survey and Manage species) known only from the immediate coast. The objective was to make an extensive and systematic search for these species to evaluate their association with late-successional/old-growth forests and rarity within the Northwest Forest Plan area.

Initial results indicate that 8 of these species are too rare to assess association with late-successional/old-growth forests, two species are associated with late-successional/old-growth forests, and three species are not associated with late-successional/old-growth forests.

Aquatic Lichens – The objective of this study was to collect distribution, and habitat information for two aquatic lichen species (*Dermatocarpon luridum* and *Leptogium rivale*). This survey involved a randomized approach to estimate abundance between reserve and non-reserve lands and collecting data on numerous habitat variables.

A total of 201 plots were surveyed across the Northwest Forest Plan area. Specimens collected from 2002 are currently being verified and preliminary analyses are beginning.



Specimen Identification

Approximately 18,000 known or suspected fungi, bryophyte, lichen and mollusk specimens were collected and have been or are awaiting identification from strategic surveys (Table 7). Of these approximately 3,000 have been identified as Survey and Manage species.

Several of these specimens required identification from agency or contracted taxa experts. Since strategic surveys have begun over 50,000 specimens have been collected.

Table 7. Specimen Identification/Verification

Taxa Group	# of Specimens
Mollusks	830
Bryophytes/Lichens	9000
Fungi	8200
TOTAL	18030

Data Analysis

Statistical analysis from the random grid survey is beginning as surveys are completed and specimens identified. Estimates of species locations and species associations will be prepared using the results of this analysis.

Strategic Survey Implementation Guide

The 2002 Strategic Survey Implementation Guide was approved and is now accessible on the Northwest Forest Plan Survey and Manage website www.or.blm.gov/surveyandmanage.

This document, which is updated annually, helps focus agency resources on the highest priority species information needs and helps ensure that the agencies comply with the strategic survey deadlines as described in the 2001 ROD standards and guidelines.

Currently the priorities of the strategic survey program are to complete the region-wide statistical survey on

randomly selected CVS/FIA plots, and complete other on-going survey efforts.

New survey work is proposed to initiate surveys for those species for which strategic surveys have not yet been initiated (great gray owl, arthropods), for species with new information needs, and for those rare species that have specific deadlines to complete strategic surveys.

The Strategic Survey Implementation Guide for 2003 is currently being prepared and is expected to be complete in early 2003. The information provided in this annual status report describes the status of the strategic survey program.

Research Projects

No new research projects were funded in fiscal year 2002. Three projects initially funded in 2001 that requested funding in 2002 were continued.

These projects included an alternative habitat modeling for lichens (see above), a Leave Island Study to look at the impacts of different size leave islands (green tree retention) for Survey and Manage species in planned activity areas, and Survey and Manage Hotspots in Northwestern California⁴.

The Leave Island study will assist land managers in the development of proper leave islands in species management. The field data were completed in 2002 with the analysis and final report to be completed in 2003.

The Hotspot study evaluated the association of species richness hotspots to land use allocation, compared hotspots to non-hotspots relative to environmental gradients and disturbance, and developed a model that will predict hotspots within the California Klamath physiographic province. A final report is expected in February 2003.

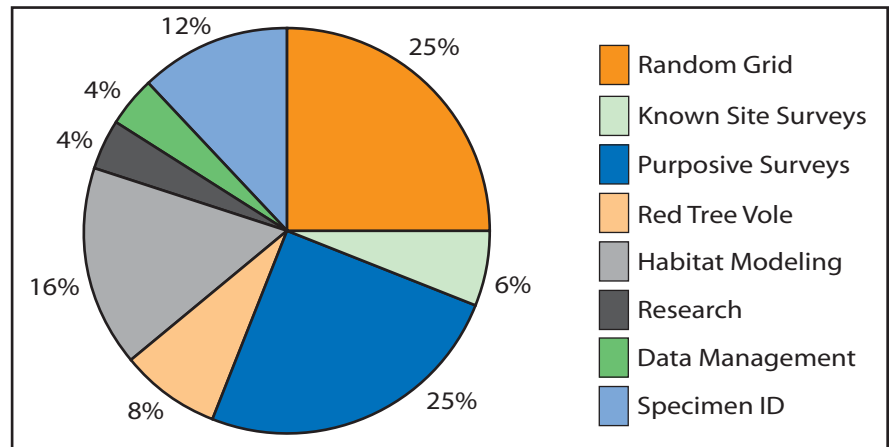
⁴ Please refer to page 5, Survey and Manage FY 2001 Annual Status Report

Strategic Surveys (cont.)

2002 Budget

The Strategic Survey budget represented 45% of the total fiscal year 2002 Survey and Manage program budget. Figure 2 shows how strategic survey funding was spent.

Figure 2. FY02 Strategic Survey Funding



Information Management

Interagency Species Management System (ISMS)

Since 1994, the Forest Service and the BLM gathered location data for Survey and Manage species from herbaria museums, and National Forest and BLM District staffs. This information was compiled into the *Known Sites Database* in 1996 which has since been replaced by the *Interagency Species Management System (ISMS)*, developed over several years and deployed in the field in March of 2000.

The ISMS database holds information on Survey and Manage species and their habitats, plus information about where surveys have occurred. This includes sites discovered prior to proposed land management activities (such as timber sales and stream rehabilitation projects), and during Strategic Surveys.

In FY02, approximately 6500 records of known sites for all Survey and Manage species were entered, bringing the total occurrence records to about 56,000. Much data clean-up was also done, eliminating inaccurate information and duplicate sites.

The ISMS team at Portland, Oregon is responsible for maintaining the ISMS application; providing training and

support to the ISMS users; and developing upgrades. Early in FY02 the BLM lost access for several months to the Internet and the FS Network due to the Indian Trust/Cobell lawsuit. The team developed various technical solutions, approved at the Department of the Interior, to overcome the problem and allow field office use of ISMS.

The team upgraded ISMS in several ways in FY02. ISMS Version 1.14 to implement new requirements created by the 2001 ROD was deployed. This included modifications allowing management status changes from the Annual Species Review decisions, and accommodating new and revised survey protocols requirements.

The team upgraded the Red Tree Vole Module of the ISMS database to Version 1.10, adding additional capability and developed the Known Site Survey Module of ISMS to allow entry of detailed known sites habitat data collected during the Known Site Revisit inventories. Such data are useful for habitat predictive models.

Information Management (cont.)



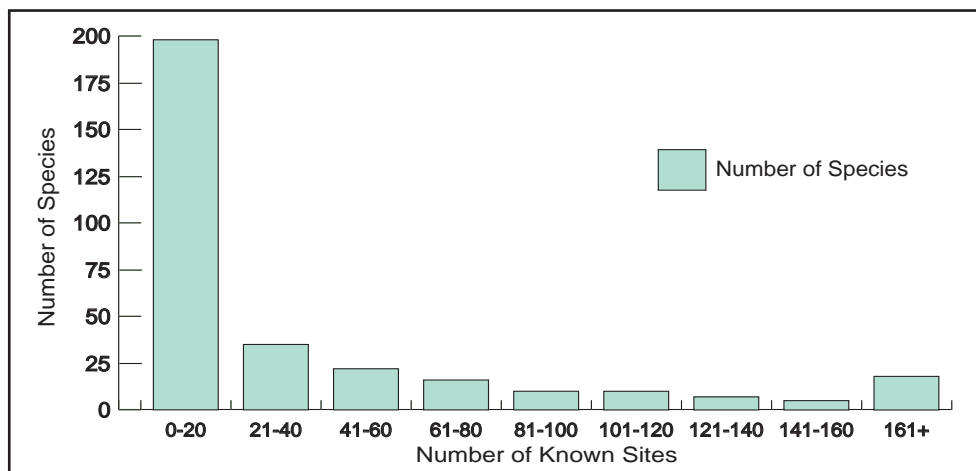
User support included several training sessions for using ISMS attended by new FS and BLM ISMS users, daily help desk support and working with ISMS users to develop requirements and specifications for advanced query capability.

The team also began identifying requirements for overhaul and upgrade of the ISMS database to take advantage of more modern technology and more focused informational needs. This process will extend into 2003.

The ISMS database provides information useful in understanding the rarity of Survey and Manage species. **Figure 3** depicts the number of Survey and Manage species known from 0-20 sites, 21-40 sites, 41-60 sites and so on.

Of all Survey & Manage species, 62% are known from less than 20 sites in the Northwest Forest Plan area. Fungi account for 69% of this group, lichens compose 14%, 11% are mollusks, 5% are bryophytes and 2% are vascular plants.

Figure 3. S&M Species by Number of Known Sites



Annual Species Review



Results of the FY01 Annual Species Review (ASR) were released to the public in June 2002, which technically qualifies them as accomplishments for FY02. They are found in this report. Agency approval of the FY02 Annual Species Review results is pending; those results are expected later this spring. They will be published in the FY03 Annual Status Report.

Overview

The Annual Species Review is an annual adaptive management process that evaluates emerging information and ensures appropriate levels of management for Survey and Manage species. The 2001 ROD Standards and Guidelines pages 14-19 provide the guidance for this process which is comprised of four phases:

1) A Three Step Assessment of Information

➡ Step 1 determines if substantial new information has accumulated on individual species since the last Review.

➡ Step 2 documents the new information along with all that is currently known for each species

➡ Step 3 evaluates all of the available information and applies the criteria included in the 2001 S&G's to determine if species should be included in S&M and to determine the appropriate S&M category.

2) A Review of the Assessment Results by taxa experts (30-day review process)

3) The Intermediate Management Group (IMG) with a representative from the



Annual Species Review (cont.)

Regional Ecosystem Office (REO) then reviews the results of Step 3 and formulates options and recommendations for REO review and for the Regional Interagency Executive Committee (RIEC) who develops a finding on the outcome of the ASR.

4) The final step in the process is achieved when the agency leads for the FS and BLM issue the decision in compliance with the RIEC finding for implementation by the administrative units throughout the Northwest Forest Plan (NWFP) area.

Through the ASR process species can:

- ▶ be removed from, or added to, the S&M program,
- ▶ be changed from one management category to another, or
- ▶ have a new biological range validated.

A species can be removed from S&M if the species or its potential habitat does not occur within the NWFP area; the species is not found to be associated with late-successional or old-growth forest; and/or the reserve system or other Standards and Guidelines of the NWFP provide for a reasonable assurance of persistence of the species.

Species proposed for addition to S&M must be taxonomic entities published in appropriate peer-reviewed journals accepted by the scientific community. They must also occur or have potential habitat within the NWFP area, be associated with late-successional or old-growth forest, and reasonable assurance of persistence is not provided by the reserve system or by the implementation of other Standards and Guidelines of the NWFP.

Summary of FY 2001 Annual Species Review Results

All 346 Survey and Manage species were evaluated in FY2001. Thirty-seven species were removed in all or part of

their ranges from Survey and Manage requirements. The species were removed because 1) the reserve system and other S&Gs of the NWFP provide for a reasonable assurance of species persistence, or 2) were not closely associated with late-successional or old growth forest.

- ▶ 4 Survey and Manage species no longer require pre-disturbance surveys
- ▶ 4 Survey and Manage species that did not require pre-disturbance surveys previously now require them.
- ▶ 3 Survey and Manage species no longer require managing known sites.
- ▶ 317 species remain in Survey and Manage
- ▶ Over 6000 known sites were released from Survey and Manage requirements, but species persistence is still covered by other Standards and Guidelines of the NWFP
- ▶ The requirement to survey for Red Tree Voles was removed for the central part of its range in Oregon. The agencies will continue to manage known sites throughout its range.

See Table 1-1 in Appendix One Species Included in Survey and Manage Standards and Guidelines and Category Assignment (June 2002), for the most recent listing of Survey and Manage species and their management categories (also accessible online at www.or.blm.gov/surveyandmanage/)

FY02 Annual Species Review

The 2002 Annual Species Review was initiated in January 2002, evaluating 314 species to determine if there was significant new information available that would support further evaluation of the species. Ninety-two species, including 25 new species proposed for addition, were elevated to the last phase of the process to determine if management changes were justified. Several changes were made to the review



process for 2002. A Bayesian belief network was used this year to help identify an initial list of potential outcomes that were consistent with the information identified for each taxon and with the 2001 Standards and Guidelines.

22 Species Removed by 2001 ROD

22 species were removed by the 2001 ROD because they were found not to be closely associated with late-successional

or old growth forest. The 2001 ROD requirement to consider these for inclusion into the agencies special status programs was initiated.

At this writing, Pacific Northwest Region (Region 6) Forest Service officials determined that 7 lichen and 1 bryophyte species would not meet criteria to be added to that agency's sensitive species program. Results of the other species evaluations are expected this year.

Management Recommendations



What are they?

Management Recommendations (MRs) are guidelines for managing Survey and Manage species on federal lands within the Northwest Forest Plan area. These guidelines establish specific goals and objectives for the species and general management policy for providing a reasonable assurance of species persistence at the known site-scale. The guidelines also describe species' life history, characteristics, and habitat relations.

Under the provisions of the 2001 ROD, new MRs, called "High Priority Site MRs" are in development for certain species which tend to have high numbers of known sites, less restricted distribution patterns relative to their ranges, or moderate-to-broad ecological amplitude.

Not all known sites are likely to be necessary for a reasonable assurance of persistence. In addition, in the geographic area covered by the Northwest Forest Plan where fires occur frequently, MRs were developed to allow fuels-reduction treatments (as directed by the National Fire Plan) to help reduce the risk of large-scale or high intensity fires.

New and Revised Management Recommendations

In the 1994 ROD, Survey and Manage species were organized into one or more

of four categories regarding the type of management and surveys required. The 2001 ROD created six management categories for these species, based on the ability to find them in surveys, and whether they are rare or uncommon.

Due to these changes many species now require the creation or revision of MRs. Currently, all but 15 Survey and Manage species are required to have MRs. These species are exempt from this requirement because they are uncommon and information is insufficient to determine specific criteria for persistence or association with late-successional and old-growth forest.

Management recommendations are being written or revised for 100 species.

Table 2-1 in Appendix Two displays the list of species that were without governing MRs when the 2001 ROD was implemented. The MRs of species not listed in Table 2-1 were completed prior to the 2001 ROD and continue to be in effect.



Implementation Monitoring

The primary objective of implementation monitoring for Survey and Manage (S&M) species is to determine to what extent agencies have complied with the *2001 ROD* Standards and Guidelines and the *1994 ROD*.

Results of implementation monitoring reviews provide critical feedback to the agencies and allow us to evaluate our progress toward meeting species persistence objectives.

Using a standard questionnaire format, FY02 reviews were conducted on 21 watersheds and 32 projects (21 Late-Successional Reserve density management projects and 11 “other” projects), randomly selected throughout the Northwest Forest Plan area.

Questions addressing Survey and Manage species from previous reviews were modified to reflect the requirements of the *2001 ROD* standards and guidelines.

The results of the FY02 watershed implementation monitoring reviews show that the units conducted pre-disturbance surveys for many Survey and Manage species; 18 of the 21 watersheds (86%) have known site(s) for S&M species. All units that conducted pre-disturbance surveys reported that they were conducted to established protocols.

In addition to surveys, local databases, historical records and Interagency Species Management System (ISMS) were used to determine if known sites for S&M species existed within the watershed.

For the 18 watersheds that contained known sites, 15 reported that existing species’ Management Recommendations were used to manage known sites, or in the other three cases, management direction was obtained from the *2001 ROD*, Appendix J2⁵, current literature, and species experts.

The results of the FY02 project implementation monitoring reviews demonstrate a very high level of compliance for questions specific to S&M species.

⁵ Appendix J-2 USDA Forest Service and USDI Bureau of Land Management. 1994a. Final supplemental environmental impact statement on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl (Northwest Forest Plan). Portland, Oregon. Vols. I & II, and Appendix J-2 Results of Additional Species Analysis var. p. [FSEIS]



Projects and Watersheds Monitored in FY02

PROJECTS:

24 density management projects in Late-Successional Reserves (two per province)

12 commercial thinning

10 pre-commercial thinning

Two of the density management project reviews were not conducted because one review was cancelled due to the severe 2002 fire season (Deschutes Province) and another province (NW Sacramento) only had one density management project that met the selection criteria.

12 “other” projects

1 grazing project

2 prescribed fire projects

4 recreation projects

5 watershed projects

One province combined a commercial thinning, pre-commercial thinning, and a prescribed fire project into one review and reported these results on a single project questionnaire. Therefore, the Project Implementation Monitoring Report Summary was developed from the 21 LSR density management projects reports and 11 “other” project reports that were submitted.

98% compliance overall

All Land Allocations - 99.26%

Late-Successional Reserves/Managed

Late-Successional Areas - 97.67%

Watershed Analysis/Aquatic

Conservation Strategy/Riparian

Reserves -98.3%

Matrix not applicable

Adaptive Management Areas - 100%

Research - 100%

Species - 98.8%

WATERSHED:

12 planning provinces,

2 watersheds per province

logistical problems resulted in 21 watersheds being monitored

Summary

There was a high degree of compliance with meeting the Standards and Guidelines.

There is no evidence that reveals the need to amend the plan or conduct major changes in the way the plan is implemented.

The 2002 Implementation Monitoring Report is in development, and is expected for release in the near future. Monitoring information is accessible online at www.reo.gov/monitoring.



Looking Forward

In November the Regional Foresters and State Directors formed a planning team to consider an alternative to replace Survey and Manage mitigation requirements with existing Forest Service and BLM special status species programs. This was in response to a Settlement Agreement for the Douglas Timber Operators, et al. V. Secretary of Agriculture and Interior lawsuit.

While this effort is in progress the Survey and Manage Program has not slowed in its aggressive implementation of the *2001 ROD*. Significant accomplishments were recorded in FY02 and this trend will continue in FY03.

Why not slow down in anticipation of the removal of the need for Survey and Manage? The Regional Foresters and State Directors (November 5, 2002) directed the agencies to comply with the *2001 ROD* until a new course is charted with the signing of a new ROD. Until then an exact outcome is uncertain.

In addition, the Survey and Manage program is an adaptive management program that results in continuous changes that can result in relief to other programs while maintaining species protections. These changes should not be delayed.

Lastly, the information being developed will not only support immediate adjustments in management but will also be valuable for the management of species under our Special Status Species Programs if that SEIS alternative is selected. We will stay on course.

There is much to look forward to in FY03. Many accomplishments are in store for our strategic surveys. We will continue to use the power of information gathered through these surveys.

The first significant use of analyses from random grid surveys will begin. New information will support our annual species review and concentrate our efforts on our management recommendations and survey protocols. The outcome is a more efficient program that will provide increased flexibilities to other programs while providing appropriate management for Survey and Manage species at reduced costs.

I look forward to reporting these accomplishments to you next year.

/s/ Terry Brumley, Survey and Manage Program Manager

Appendix One



Table 1-1 Results of FY01 Annual Species Review

Species Included in Survey and Manage Standards and Guidelines and Category Assignment (June 2002)

Note: Where taxon has more than one name indicated, first name is current accepted name, second one (in parentheses) is name used in NFP (Table C-3).

TAXA GROUP Species	Category
FUNGI	

<i>Acanthophysium farlowii</i> (<i>Aleurodiscus farlowii</i>)	B
<i>Albatrellus avellaneus</i>	B
<i>Albatrellus caeruleoporus</i>	B
<i>Albatrellus ellisii</i>	B
<i>Albatrellus flettii</i> , In Washington and California	B
<i>Alpova alexsmithii</i>	B
<i>Alpova olivaceotinctus</i>	B
<i>Arcangeliella camphorata</i> (<i>Arcangeliella</i> sp. nov. #Trappe 12382; <i>Arcangeliella</i> sp. nov. #Trappe 12359)	B
<i>Arcangeliella crassa</i>	B
<i>Arcangeliella lactarioides</i>	B
<i>Asterophora lycoperdoides</i>	B
<i>Asterophora parasitica</i>	B
<i>Baeospora myriadophylla</i>	B
<i>Balsamia nigrens</i> (<i>Balsamia nigra</i>)	B
<i>Boletus haematinus</i>	B
<i>Boletus pulcherrimus</i>	B
<i>Bondarzewia mesenterica</i> (<i>Bondarzewia montana</i>), In Washington and California	B
<i>Bridgeoporus nobilissimus</i> (<i>Oxyporus nobilissimus</i>)	A
<i>Cantharellus subalbidus</i> , In Washington and California	D
<i>Catathelasma ventricosa</i>	B
<i>Chalciporus piperatus</i> (<i>Boletus piperatus</i>)	D
<i>Chamonixia caespitosa</i> (<i>Chamonixia pacifica</i> sp. nov. #Trappe #12768)	B
<i>Choiromyces alveolatus</i>	B
<i>Choiromyces venosus</i>	B
<i>Chroogomphus loculatus</i>	B
<i>Chrysomphalina grossula</i>	B
<i>Clavariadelphus ligula</i>	B
<i>Clavariadelphus occidentalis</i> (<i>Clavariadelphus pistillaris</i>)	B
<i>Clavariadelphus sachalinensis</i>	B
<i>Clavariadelphus subfastigiatus</i>	B
<i>Clavariadelphus truncatus</i> (syn. <i>Clavariadelphus borealis</i>)	D
<i>Clavulina castanopes</i> v. <i>lignicola</i> (<i>Clavulina ornatipes</i>)	B
<i>Clitocybe senilis</i>	B
<i>Clitocybe subditopoda</i>	B
<i>Collybia bakerensis</i>	F
<i>Collybia racemosa</i>	B
<i>Cordyceps ophioglossoides</i>	B
<i>Cortinarius barlowensis</i> (syn. <i>Cortinarius azureus</i>)	B
<i>Cortinarius boulderensis</i>	B
<i>Cortinarius cyanites</i>	B

TAXA GROUP Species	Category
FUNGI (CONT.)	

<i>Cortinarius depauperatus</i> (<i>Cortinarius spilomeus</i>)	B
<i>Cortinarius magnivelatus</i>	B
<i>Cortinarius olympianus</i>	B
<i>Cortinarius speciosissimus</i> (<i>Cortinarius rainierensis</i>)	B
<i>Cortinarius tabularis</i>	B
<i>Cortinarius umidicola</i> (<i>Cortinarius canabarba</i>)	B
<i>Cortinarius valgus</i>	B
<i>Cortinarius variipes</i>	B
<i>Cortinarius verrucisporus</i>	B
<i>Cortinarius wiebeae</i>	B
<i>Craterellus tubaeformis</i> (syn. <i>Cantharellus tubaeformis</i>), In Washington and California	D
<i>Cudonia monticola</i>	B
<i>Cyphellostereum laeve</i>	B
<i>Dermocybe humboldtensis</i>	B
<i>Destuntzia fusca</i>	B
<i>Destuntzia rubra</i>	B
<i>Dichostereum boreale</i> (<i>Dichostereum granulosum</i>)	B
<i>Elaphomyces anthracinus</i>	B
<i>Elaphomyces subviscidus</i>	B
<i>Endogone acrogena</i>	B
<i>Endogone oregonensis</i>	B
<i>Entoloma nitidum</i> (<i>Rhodocybe nitida</i>)	B
<i>Fayodia bisphaerigera</i> (<i>Fayodia gracilipes</i>)	B
<i>Fevansia aurantiaca</i> (<i>Alpova</i> sp. nov. # Trappe 1966) (<i>Alpova aurantiaca</i>)	B
<i>Galerina atkinsoniana</i>	B
<i>Galerina cerina</i>	B
<i>Galerina heterocystis</i>	E
<i>Galerina sphagnicola</i>	E
<i>Gastroboletus imbellus</i>	B
<i>Gastroboletus ruber</i>	B
<i>Gastroboletus subalpinus</i>	B
<i>Gastroboletus turbinatus</i>	B
<i>Gastroboletus vividus</i> (<i>Gastroboletus</i> sp. nov. #Trappe 2897; <i>Gastroboletus</i> sp. nov. #Trappe 7515)	B
<i>Gastrosuillus amarantii</i> (<i>Gastrosuillus</i> sp. nov. #Trappe 9608)	E
<i>Gastrosuillus umbrinus</i> (<i>Gastroboletus</i> sp. nov. #Trappe 7516)	B
<i>Gautieria magnicellaris</i>	B
<i>Gautieria otthii</i>	B
<i>Gelatinodiscus flavidus</i>	B



Table 1-1 (cont.)

TAXA GROUP Species	Category
FUNGI (CONT.)	
<i>Glomus radiatum</i>	B
<i>Gomphus bonarii</i>	B
<i>Gomphus clavatus</i>	B
<i>Gomphus kauffmanii</i>	E
<i>Gymnomyces abietis</i> (<i>Gymnomyces</i> sp. nov. #Trappe 1690, 1706, 1710; <i>Gymnomyces</i> sp. nov. #Trappe 4703, 5576; <i>Gymnomyces</i> sp. nov. #Trappe 5052; <i>Gymnomyces</i> sp. nov. #Trappe 7545; <i>Martellia</i> sp. nov. #Trappe 1700; <i>Martellia</i> sp. nov. #Trappe 311; <i>Martellia</i> sp. nov. #Trappe 5903)	B
<i>Gymnomyces nondistincta</i> (<i>Martellia</i> sp. nov. #Trappe 649)	B
<i>Gymnopilus punctifolius</i> , In California	B
<i>Gyromitra californica</i>	B
<i>Hebeloma olympianum</i> (<i>Hebeloma olympiana</i>)	B
<i>Helvella crassitunicata</i>	B
<i>Helvella elastica</i>	B
<i>Hydnotrya inordinata</i> (<i>Hydnotrya</i> sp. nov. #Trappe 787, 792)	B
<i>Hydnotrya subnix</i> (<i>Hydnotrya subnix</i> sp. nov. #Trappe 1861)	B
<i>Hydropus marginellus</i> (<i>Mycena marginella</i>)	B
<i>Hygrophorus caeruleus</i>	B
<i>Hygrophorus karstenii</i>	B
<i>Hygrophorus vernalis</i>	B
<i>Hypomyces luteovirens</i>	B
<i>Leucogaster citrinus</i>	B
<i>Leucogaster microsporus</i>	B
<i>Macowanites chlorinosmus</i>	B
<i>Macowanites lymanensis</i>	B
<i>Macowanites mollis</i>	B
<i>Marasmius applanatipes</i>	B
<i>Martellia fragrans</i>	B
<i>Martellia idahoensis</i>	B
<i>Mycena hudsoniana</i>	B
<i>Mycena overholtsii</i>	D
<i>Mycena quinaultensis</i>	B
<i>Mycena tenax</i>	B
<i>Mythicomycetes corneipes</i>	B
<i>Neolentinus adhaerens</i>	B
<i>Neolentinus kauffmanii</i>	B
<i>Nivatogastrum nubigenum</i> , In entire range except OR Eastern Cascades and CA Cascades Physiographic Provinces	B
<i>Octavianina cyanescens</i> (<i>Octavianina</i> sp. nov. #Trappe 7502)	B
<i>Octavianina macrospora</i>	B
<i>Octavianina papyracea</i>	B
<i>Otidea leporina</i>	D
<i>Otidea smithii</i>	B

TAXA GROUP Species	Category
FUNGI (CONT.)	
<i>Phaeocollybia attenuata</i>	D
<i>Phaeocollybia californica</i>	B
<i>Phaeocollybia dissiliens</i>	B
<i>Phaeocollybia fallax</i>	D
<i>Phaeocollybia gregaria</i>	B
<i>Phaeocollybia kauffmanii</i>	D
<i>Phaeocollybia olivacea</i> , In Oregon	F
<i>Phaeocollybia olivacea</i> In Washington and California	E
<i>Phaeocollybia oregonensis</i> (syn. <i>Phaeocollybia carmanahensis</i>)	B
<i>Phaeocollybia piceae</i>	B
<i>Phaeocollybia pseudofestiva</i>	B
<i>Phaeocollybia scatesiae</i>	B
<i>Phaeocollybia sipei</i>	B
<i>Phaeocollybia spadicea</i>	B
<i>Phellodon atratus</i> (<i>Phellodon atratum</i>)	B
<i>Pholiota albivelata</i>	B
<i>Podostroma alutaceum</i>	B
<i>Polyozellus multiplex</i>	B
<i>Pseudaleuria quinaultiana</i>	B
<i>Ramaria abietina</i>	B
<i>Ramaria amyloidea</i>	B
<i>Ramaria araiospora</i>	B
<i>Ramaria aurantiiscescens</i>	B
<i>Ramaria botrytis</i> var. <i>aurantiiramosa</i>	B
<i>Ramaria celerivirescens</i>	B
<i>Ramaria claviramulata</i>	B
<i>Ramaria concolor</i> f. <i>marrii</i>	B
<i>Ramaria concolor</i> f. <i>tsugina</i>	B
<i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i> (<i>Ramaria fasciculata</i> var. <i>sparsiramosa</i>)	B
<i>Ramaria coulterae</i>	B
<i>Ramaria cyaneigranosa</i>	B
<i>Ramaria gelatiniaurantia</i>	B
<i>Ramaria gracilis</i>	B
<i>Ramaria hilaris</i> var. <i>olympiana</i>	B
<i>Ramaria largentii</i>	B
<i>Ramaria lorithamnus</i>	B
<i>Ramaria maculatipes</i>	B
<i>Ramaria rainierensis</i>	B
<i>Ramaria rubella</i> var. <i>blanda</i>	B
<i>Ramaria rubribrunnescens</i>	B
<i>Ramaria rubrievanescens</i>	B
<i>Ramaria rubripermanens</i> In Oregon	D
<i>Ramaria rubripermanens</i> In Washington and California	B
<i>Ramaria spinulosa</i> var. <i>diminutiva</i> (<i>Ramaria spinulosa</i>)	B
<i>Ramaria stuntzii</i>	B
<i>Ramaria suecica</i>	B
<i>Ramaria thiersii</i>	B
<i>Ramaria verlotensis</i>	B
<i>Rhizopogon abietis</i>	B

Appendix One



Table 1-1 (cont.)

TAXA GROUP Species	Category
FUNGI (CONT.)	

<i>Rhizopogon atroviolaceus</i>	B
<i>Rhizopogon brunneiniger</i>	B
<i>Rhizopogon chamaleontinus</i> (<i>Rhizopogon</i> sp. nov. #Trappe 9432)	B
<i>Rhizopogon ellipsosporus</i> (<i>Alpova</i> sp. nov. # Trappe 9730)	B
<i>Rhizopogon evadens</i> var. <i>subalpinus</i>	B
<i>Rhizopogon exiguus</i>	B
<i>Rhizopogon flavofibrillosus</i>	B
<i>Rhizopogon inquinatus</i>	B
<i>Rhizopogon truncatus</i>	D
<i>Rhodocybe speciosa</i>	B
<i>Rickenella swartzii</i> (<i>Rickenella setipes</i>)	B
<i>Russula mustelina</i>	B
<i>Sarcodon fuscoindicus</i>	B
<i>Sedecula pulvinata</i>	B
<i>Sowerbyella rhenana</i> (<i>Aleuria rhenana</i>)	B
<i>Sparassis crispa</i>	D
<i>Spathularia flavida</i>	B
<i>Stagnicola perplexa</i>	B
<i>Thaxterogaster pavelekii</i> (<i>Thaxterogaster</i> sp. nov. #Trappe 4867, 6242, 7427, 7962, 8520)	B
<i>Tremiscus helvelloides</i>	D
<i>Tricholoma venenatum</i>	B
<i>Tricholomopsis fulvescens</i>	B
<i>Tuber asa</i> (<i>Tuber</i> sp. nov. #Trappe 2302)	B
<i>Tuber pacificum</i> (<i>Tuber</i> sp. nov. #Trappe 12493)	B
<i>Tylophilus porphyrosporus</i> (<i>Tylophilus pseudoscaber</i>)	D

TAXA GROUP Species	Category
LICHENS	

<i>Bryoria pseudocapillaris</i>	A
<i>Bryoria spiralifera</i>	A
<i>Bryoria subcana</i> (syn. <i>Alectoria subcana</i>)	B
<i>Bryoria tortuosa</i> , In WA Olympic Peninsula, WA Western Lowlands, OR Willamette Valley Physiographic Provinces ; CA	A
<i>Bryoria tortuosa</i> , In WA Eastern Cascades, OR Eastern Cascades, OR Klamath Physiographic Provinces, Jackson County, OR	D
<i>Buellia oidalea</i>	E
<i>Calicium abietinum</i>	B
<i>Calicium adspersum</i>	E
<i>Calicium glaucellum</i>	F
<i>Calicium viride</i>	F
<i>Cetrelia cetrarioides</i>	E
<i>Chaenotheca chrysocephala</i>	B
<i>Chaenotheca ferruginea</i>	B
<i>Chaenotheca furfuracea</i>	F

TAXA GROUP Species	Category
LICHENS (CONT.)	

<i>Chaenotheca subroscida</i>	E
<i>Chaenothecopsis pusilla</i> (syn. <i>Chaenothecopsis subpusilla</i> , <i>Calcium asikkalense</i> , <i>Calcium floerkei</i> , <i>Calcium pusillum</i> , <i>Calcium subpusillum</i>)	E
<i>Cladonia norvegica</i>	B
<i>Collema nigrescens</i> , In WA and OR, except in OR Klamath Physiographic Province	F
<i>Dendroscocaulon intricatum</i> In Coos, Douglas, Curry, Josephine, & Jackson Counties, OR; CA	E
<i>Dendroscocaulon intricatum</i> In Coos, Douglas, Curry, Josephine, & Jackson Counties, OR; CA	E
<i>Dendroscocaulon intricatum</i> In the rest of Oregon and all of Washington	A
<i>Dermatocarpon luridum</i>	E
<i>Heterodermia sitchensis</i>	E
<i>Hypogymnia duplicata</i> (syn. <i>Hypogymnia elongata</i>)	A
<i>Hypogymnia vittata</i> (<i>Hygomnia vittata</i>)	E
<i>Hypotrachyna revoluta</i> (syn. <i>Parmelia revoluta</i>)	E
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	E
<i>Leptogium cyanescens</i>	A
<i>Leptogium rivale</i>	E
<i>Leptogium teretiusculum</i>	E
<i>Lobaria linita</i>	A
<i>Lobaria oregana</i> , In California	A
<i>Microcalicium arenarium</i>	B
<i>Nephroma bellum</i> , In OR; Klamath, Willamette Valley, Eastern Cascades; WA; Western Cascades (outside GPNF), Eastern Cascades, Olympic Peninsula Physiographic Provinces	E
<i>Nephroma isidiosum</i>	E
<i>Nephroma occultum</i>	A
<i>Niebla cephalota</i> (syn. <i>Desmazieria cephalota</i> , <i>Ramalina cephalota</i>)	A
<i>Pannaria rubiginosa</i>	E
<i>Pannaria saubinetii</i>	F
<i>Peltigera pacifica</i>	E
<i>Platismatia lacunosa</i>	C
<i>Pseudocyphellaria perpetua</i> (<i>Pseudocyphellaria</i> sp. 1)	B
<i>Pseudocyphellaria rainierensis</i>	A
<i>Pyrrhospora querneae</i> (syn. <i>Lecidea querneae</i> , <i>Protoblastenia querneae</i>)	E
<i>Ramalina pollinaria</i>	E
<i>Ramalina thrausta</i>	A
<i>Stenocybe clavata</i>	E
<i>Teloschistes flavicans</i>	A
<i>Tholurna dissimilis</i> , south of Columbia River	B
<i>Usnea hesperina</i>	E
<i>Usnea longissima</i> , In California and in Curry, Josephine, and Jackson Counties, Oregon	A
<i>Usnea longissima</i> , In Oregon, except in Curry, Josephine, and Jackson Counties and in Washington	F



Table 1-1 (cont.)

TAXA GROUP Species	Category
BRYOPHYTES	

<i>Brotherella roellii</i>	E
<i>Buxbaumia viridis</i> , In California	E
<i>Diplophyllum albicans</i>	F
<i>Diplophyllum plicatum</i>	B
<i>Encalypta brevicolla</i> v. <i>crumiana</i>	B
<i>Herbertus aduncus</i>	E
<i>Iwatsukiella leucotricha</i>	B
<i>Kurzia makinoana</i>	B
<i>Marsupella emarginata</i> v. <i>aquatica</i>	B
<i>Orthodontium gracile</i>	B
<i>Ptilidium californicum</i> , In California	A
<i>Racomitrium aquaticum</i>	E
<i>Rhizomnium nudum</i>	B
<i>Schistostega pennata</i>	A
<i>Tetraphis geniculata</i>	A
<i>Tritomaria exsectiformis</i>	B
<i>Tritomaria quinqueidentata</i>	B

TAXA GROUP Species	Category
VERTEBRATES	

Larch Mountain salamander <i>Plethodon larselli</i>	A
Shasta salamander <i>Hydromantes shastae</i>	A
Siskiyou Mountains salamander <i>Plethodon stormi</i> , In North Range	D
Siskiyou Mountains salamander <i>Plethodon stormi</i> , Outside North Range	C
Van Dyke=s salamander <i>Plethodon vandykei</i> , Cascade population only	A
Great Gray Owl <i>Strix nebulosa</i>	C
Oregon Red Tree Vole <i>Arborimus longicaudus</i> , In Central Range	D
Oregon Red Tree Vole <i>Arborimus longicaudus</i> , Outside Central Range	C

TAXA GROUP Species	Category
MOLLUSKS	

<i>Ancotrema voyanum</i>	E ^{3,4}
<i>Cryptomastix devia</i>	A
<i>Cryptomastix hendersoni</i>	A
<i>Deroceras hesperium</i>	B ⁴
<i>Fluminicola</i> n. sp. 3	A ²
<i>Fluminicola</i> n. sp. 11	A ²
<i>Fluminicola</i> n. sp. 14	A
<i>Fluminicola</i> n. sp. 15	A
<i>Fluminicola</i> n. sp. 16	A
<i>Fluminicola</i> n. sp. 17	A
<i>Fluminicola</i> n. sp. 18	A
<i>Fluminicola</i> n. sp. 19	A ²
<i>Fluminicola</i> n. sp. 20	A ²
<i>Fluminicola seminalis</i>	A ²
<i>Helminthoglypta hertleini</i>	E ⁴
<i>Helminthoglypta talmadgei</i>	D
<i>Hemphillia burringtoni</i>	E
<i>Hemphillia glandulosa</i> , In WA Western Cascades Physiographic Province	E
<i>Hemphillia malonei</i> , Washington	C
<i>Hemphillia pantherina</i>	B ⁴
<i>Juga</i> (O) n. sp. 2	A
<i>Juga</i> (O) n. sp. 3	A
<i>Lyogyrus</i> n. sp. 1	A
<i>Lyogyrus</i> n. sp. 2	A
<i>Lyogyrus</i> n. sp. 3	A
<i>Megomphix hemphilli</i> , South of south boundary of Lincoln, Benton, and Linn Counties, Oregon	F ⁵
<i>Megomphix hemphilli</i> , North of south boundary of Lincoln, Benton, and Linn Counties, Oregon	A
<i>Monadenia chaceana</i>	B ⁴
<i>Monadenia fidelis klamathica</i>	B ^{3,4}
<i>Monadenia fidelis minor</i>	E
<i>Monadenia fidelis ochromphalus</i>	B ^{3,4}
<i>Monadenia troglodytes troglodytes</i>	A
<i>Monadenia troglodytes wintu</i>	A
<i>Oreohelix</i> n. sp.	A
<i>Pristiloma arcticum crateris</i>	B ^{2,4}
<i>Prophysaon coeruleum</i> , In California and Washington	A
<i>Trilobopsis roperi</i>	A
<i>Trilobopsis tehamana</i>	A
<i>Vertigo</i> n. sp.	A
<i>Vespericola pressleyi</i>	A
<i>Vespericola shasta</i>	A
<i>Vorticifex</i> n. sp. 1	E



Table 1-1 (cont.)

TAXA GROUP Species	Category
VASCULAR PLANTS	

<i>Arceuthobium tsugense mertensiana</i> , In Washington only	F
<i>Bensoniella oregana</i> , In California only	A
<i>Botrychium minganense</i> , In Oregon and California	A
<i>Botrychium montanum</i>	A
<i>Coptis asplenifolia</i>	A
<i>Coptis trifolia</i>	A
<i>Corydalis aquae-gelidae</i>	C
<i>Cypripedium fasciculatum</i> , Entire Range	C
<i>Cypripedium montanum</i> , Entire range except Washington Eastern Cascades Physiographic Province	C
<i>Eucephalus vialis (Aster vialis)</i>	A
<i>Galium kamtschaticum</i> , Olympic Peninsula, WA Eastern Cascades, OR & WA Western Cascades Physiographic Provinces, south of Snoqualmie Pass	A
<i>Platanthera orbiculata</i> var. <i>orbiculata (Habenaria orbiculata)</i>	C

TAXA GROUP Species	Category
ARTHROPODS	

Canopy herbivores (south range)	F
Coarse wood chewers (south range)	F
Litter and soil dwelling species (south range)	F
Understory and forest gap herbivores (south range)	F

FOOTNOTES

- ¹ Although Pre-Disturbance Surveys are deemed practical for these species, continuing pre-disturbance surveys is not necessary in order to meet management objectives.
- ² For these species, until Management Recommendations are written, the following language will be considered part of the Management Recommendation: "Known and newly discovered sites of these species will be protected from grazing by all practical steps to ensure that the local population of the species will not be impacted."
- ³ For these species, until Management Recommendations are written, the language "known and newly discovered sites of these species will be protected from grazing by all practical steps to ensure that the local population of the species will not be impacted" is the Management Recommendation and no other recommendations are imposed at this time.
- ⁴ Based upon direction contained in the ROD, equivalent-effort pre-disturbance surveys are required for these eight mollusk species.
- ⁵ Based upon direction contained in the ROD, these two mollusk species require management of sites known as of 9/30/99.



Table 2-1 provides a listing of species that lacked Management Recommendations (MRs) when the Survey and Manage 2001 Record of Decision and Standards and Guidelines was signed, and an update as to current MR status. Status is categorized into “no draft” produced; “draft in

review”; “final pending” awaiting agency review; and “done.” The MRs of Survey and Manage species not listed in Table 2-1 were completed prior to the 2001 Record of Decision and Standards and Guidelines and continue to be in effect.

Table 2-1 Status of Management Recommendations as of February 2003

BRYOPHYTES

Known Site MR (A,B,E species)	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
Status: No Draft	Status: Not Applicable - no species qualify	Status: Done
<i>Schistotega pennata</i> (amendment)		<i>Ptilidium californicum</i> <i>Schistostega pennata</i> <i>Tetraphis geniculata</i>

FUNGI

Known Site MR (A,B,E species)	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
Status: No Draft	Status: No Draft	Status: Done
<i>Albatrellus ellisii</i> <i>Albatrellus flettii</i> , Wash. and Calif. <i>Asterophora lycoperdoides</i> <i>Asterophora parasitica</i> <i>Baeospora myriadophylla</i> <i>Catathelasma ventricosa</i> <i>Chrysomphalina grossula</i> <i>Clavariadelphus ligula</i> <i>Clavariadelphus occidentalis</i> (syn. <i>Clavariadelphus istillaris</i>) <i>Clavariadelphus sachalinensis</i> <i>Clavariadelphus subfastigiatus</i> <i>Clavulina castanopes</i> v. <i>lignicola</i> (syn. <i>Clavulina ornatipes</i>) <i>Collybia racemosa</i> <i>Cordyceps ophioglossoides</i> <i>Cortinarius barlowensis</i> (syn. <i>Cortinarius azureus</i>) <i>Cortinarius cyanides</i> <i>Cortinarius depauperatus</i> (syn. <i>Cortinarius spilomeus</i>) <i>Cortinarius tabularis</i> <i>Cortinarius valguis</i> <i>Cudonia monticola</i> <i>Cyphellostereum leave</i> <i>Fayodia bisphaerigera</i> (syn. <i>Fayodia gracilipes</i>) <i>Galerina atkinsoniana</i> <i>Galerina cerina</i>	<i>Cantharellus subalbidus</i> , Wash. and Calif. <i>Chalciporus piperatus</i> (syn. <i>Boletus piperatus</i>) <i>Clavariadelphus truncatus</i> (syn. <i>Clavariadelphus borealis</i>) <i>Craterellus tubaeformis</i> (syn. <i>Cantharellus tubaeformis</i>), Wash. and Calif. <i>Mycena overholtsii</i> <i>Otidea leporine</i> <i>Phaeocollybia attenuata</i> <i>Ramaria rubripermanens</i> , in Oregon <i>Rhizopogon truncatus</i> <i>Sparassis crispa</i> <i>Tremiscus helvelloides</i> <i>Tylopilus porphyrosporus</i> (syn. <i>Tylopilus pseudoscaber</i>)	<i>Cantharellus subalbidus</i> <i>Clavariadelphus occidentalis</i> <i>Clavariadelphus sachalinensis</i> <i>Gomphus bonarii</i> <i>Gomphus clavatus</i> <i>Gomphus kauffmanii</i> <i>Helvella crassitunicata</i> <i>Mycena overholtsii</i> <i>Otidea leporina</i> <i>Ramaria rubripermanens</i> <i>Sowerbyella rhenana</i> <i>Spathularia flavida</i> <i>Tremiscus helvelloides</i>



Table 2-1 (cont.)

FUNGI (cont.)

Known Site MR (A,B,E species)

Status: No Draft

- Galerina heterocystis*
- Galerina sphagnicola*
- Gastroboletus turbinatus*
- Gomphus bonarii*
- Gomphus clavatus*
- Gomphus kauffmanii*
- Gyromitra californica*
- Hydropus marginellus*
(syn. *Mycena marginella*)
- Hygrophorus caeruleus*
- Hypomyces luteovirens*
- Mycena tenax*
- Mythicomycetes corneipes*
- Octavianina papyracea*
- Phaeocollybia fallax*
- Phaeocollybia kauffmanii*
- Phaeocollybia olivacea*,
Washington and California
- Phaeocollybia pseudofestiva*
- Phellodon atratus*
(syn. *Phellodon atratum*)
- Podostroma alutaceum*
- Ramaria abietina*
- Ramaria concolor* f. *tsugina*
- Ramaria coulterae*
- Ramaria suecica*
- Rhizopogon abietis*
- Rhizopogon atroviolaceus*
- Russula mustelina*
- Sarcodon fuscoindicus*
- Spathularia flavida*
- Stagnicola perplexa*



If you wish to learn more about fungi such as the *Ramaria araiospora* above, visit the Pacific Northwest Research Station Fungi Team's website at www.fs.fed.us/pnw/mycology/survey/index.html.



Table 2-1 (cont.)

LICHENS

Known Site MR (A,B,E species)	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
Status: No Draft	Status: No Draft	Status: Done
<p><i>Calicium abietinum</i> <i>Calicium adpersum</i> <i>Cetrelia cetrarioides</i> <i>Chaenotheca chrysocephala</i> <i>Chaenothecaferruginea</i> <i>Chaenothecopsis pusilla</i> (syn. <i>Chaenothecopsis subpusilla</i>) <i>Calcium asikkalense</i> <i>Calcium floerkei</i> <i>Calcium pusillum</i> <i>Calcium subpusillum</i>) <i>Chaenotheca subroscida</i> <i>Cladonia norvegica</i> <i>Hypogymnia vittata</i> (syn. <i>Hygomnia vittata</i>) <i>Hypotrachyna revoluta</i> (syn. <i>Parmelia revoluta</i>) <i>Leptogium burnetiae</i> var. <i>hirsutum</i> <i>Leptogium cyanescens</i> <i>Leptogium teretiusculum</i> <i>Lobaria oregana</i>, in California <i>Microcalicium arenarium</i> <i>Nephroma isidiosum</i> <i>Nephroma occultum</i> <i>Peltigera pacifica</i> <i>Ramalina pollinaria</i> <i>Ramalina thrausta</i> <i>Stenocybe clavata</i> <i>Usnea longissima</i>, Calif. and Oregon: Curry, Josephine, and Jackson Counties</p>	<p><i>Bryoria tortuosa</i>, in Washington: Olympic Peninsula and Western Lowlands; in Oregon: Willamette Valley Physiographic Provinces; and in California <i>Platismatia lacunosa</i></p>	<p><i>Bryoria tortuosa</i> <i>Dendroscopula intricatum</i>, <i>Peltigera pacifica</i> <i>Ramalina thrausta</i> <i>Usnea longissima</i></p>

MOLLUSKS

	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
	Status: No Draft	Status: Done
	<p><i>Hemphillia malonei</i>, in Washington <i>Helminthoglypta talmadgei</i></p>	<p><i>Helminthoglypta hertleini</i> <i>Helminthoglypta talmadgei</i> <i>Monadenia chaceana</i> <i>Monadenia fidelis minor</i> <i>Monadenia troglodytes troglodytes</i> <i>Monadenia troglodytes wintu</i> <i>Prophysaon coeruleum</i> <i>Vespericola shasta</i> <i>Megomphix hemphilli</i> <i>Oreohelix</i> n. sp., <i>Pristiloma arcticum crateris</i></p>



Table 2-1 (cont.)

VASCULAR PLANTS

	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
	Status: No Draft	Status: Done
	<i>Corydalis aquae-gelidae</i> <i>Cypripedium montanum</i> <i>Platanthera orbiculata</i> var. <i>orbiculata</i>	<i>Cypripedium fasciculatum</i> <i>Eucephalus vialis</i> <i>Botrychium montanum</i>

VERTEBRATES (Amphibians)

Known Site MR (A,B,E species)	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
Status: No Draft	Status: No Draft	Status: Done
3 V.2.0--Van Dyke's (<i>Plethodon vandykei</i>) Larch Mountain (<i>Plethodon larselli</i>) Shasta (<i>Hydromantes shastae</i>)	Siskiyou Mountains (<i>Plethodon stormi</i>)	Siskiyou Mountains (<i>Plethodon stormi</i>) Shasta (<i>Hydromantes shastae</i>)

VERTEBRATES (Great Gray Owl)

Known Site MR (A,B,E species)	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
Status: Current direction in 2001 Standards and Guidelines, page 39, applies	Status: No Draft	Status: Draft MR exceeded current direction in 2001 Standards and Guidelines page 39; NFP-Wide MR to be applied
	<i>Strix nebulosa</i>	<i>Strix nebulosa</i>

VERTEBRATES (Red Tree Vole)

	NFP-Wide MR (C&D species)	Fire/Fuel Treatment - Communities at Risk MR
	Status: No Draft, several proposals developed	Status: Done
	<i>Arborimus longicaudus</i> , outside central portion of range	



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