



**BOBBY CREEK RESEARCH NATURAL AREA  
MANAGEMENT PLAN**

**May 2004**

**Bureau of Land Management**

**Medford District**

**Prepared by:**

**Approved by:**

# CONTENTS

	<b>Page</b>
<b>I. POLICY</b> .....	4
<b>II. BASIS FOR DEDICATION AND MANAGEMENT OBJECTIVES</b> .....	4
A. Basis for Dedication.....	4
1. Oregon Natural Heritage Plan Cells.....	5
2. Uniqueness and Size.....	5
B. Management Objectives.....	6
1. Oregon Natural Heritage Plan Cells.....	6
2. Special Status Species.....	6
3. Research and Education.....	7
<b>III. NATURAL AREA AND ELEMENT DESCRIPTIONS</b> .....	7
A. Bobby Creek RNA Description.....	7
1. Location.....	7
2. Site History.....	9
3. Aspects and Elevation.....	9
4. Geology.....	9
5. Climatic Conditions.....	9
6. Soils.....	9
7. Hydrology.....	9
8. Riparian Ecology.....	11
9. Vegetation.....	11
10. Fisheries.....	14
11. Wildlife.....	14
12. Timber Management and Transportation.....	15
B. Elements and Element Occurrences.....	15
C. Surrounding Land Uses.....	15
<b>IV. MANAGEMENT CONSIDERATIONS</b> .....	16
A. Logging.....	16
B. Insects and Disease.....	17
C. Fire Management.....	17
D. Domestic Grazing.....	18
E. Mining.....	18
F. Public Use.....	18
G. Roads and Utility Rights of Way.....	19
H. Hunting, Fishing and Trapping.....	20
I. Introduced Species.....	20
K. Special Status Plants.....	21

<b>V. MONITORING</b> .....	21
A. Definition and Role of Monitoring.....	21
B. Types of Monitoring and Monitoring Needs.....	22
1. Ecological Status Monitoring.....	22
2. Management Treatment Monitoring.....	22
3. Defensibility Monitoring.....	23
4. Compliance Monitoring.....	23
<b>REFERENCES</b> .....	24

## **TABLES AND FIGURES**

Figure 1 Location Map.....	8
Figure 2 Soils Map.....	10
Figure 3 Plant Series Map.....	12
Figure 4 Plant Associations Map.....	13
Table 1 Summary of Harvested Units.....	16

## I. POLICY

Research Natural Areas (RNAs) are established for their significant biological and physical features. RNAs preserve and protect unique terrestrial and aquatic ecosystems for research and education and also serve as natural laboratories and as baselines for comparing the effects of human manipulations in similar geographical settings. These areas contain valuable gene pools of native organisms, including plant and animal species designated as threatened, endangered, or sensitive.

The purpose of this management plan is to provide management direction for the Bobby Creek RNA and provide for the overall resource protection, maintenance, and level of utilization intended by the Bureau of Land Management (BLM) and the public. This management plan is written in accordance with guidelines developed by the Pacific Northwest Interagency Natural Area Committee (1990) and is consistent with direction in the Medford District Bureau of Land Management Record of Decision and Resource Management Plan (1995). The BLM's role is guided primarily by the mission described in the Federal Land Policy and Management Act of 1976 (FLPMA), which states that public lands be managed in a manner that will protect scientific and environmental values, and to "preserve and protect certain public lands in their natural condition" (102(a)(8)).

The guiding principal of RNA management is to allow ecological and physical processes to dominate, while preventing human-induced encroachments, including activities that directly or indirectly modify ecological processes in the area. Natural processes govern the management of the Research Natural Area and human intervention occurs only when a unique component is at risk (BLM Manual Supplement 1623, 1987).

This document and the recommendations within can be updated as conditions or management direction change.

## II. BASIS FOR DEDICATION AND MANAGEMENT OBJECTIVES

**A. Basis for Dedication.** The Bobby Creek RNA was established in June 1995 (Record of Decision and Resource Management Plan, 1995) to fill terrestrial element needs as listed in the Oregon Natural Heritage Plan (ORNHP). ORNHP Ecosystem Cells are selected to "represent the full range of Oregon's natural heritage resources" (ORNHP, 1998). Additionally, the RNA was established due to the area's uniqueness and size.

**1. Oregon Natural Heritage Plan Cells.** Within Bobby Creek RNA, the following Klamath Mountains Ecosystems Cells are represented (these cells are ranked in order of priority as high, medium or low with regard to their relative rarity of occurrence):

Western Hemlock Zone:

- Cell 23. Western hemlock-tanoak/Pacific rhododendron, western hemlock-incense cedar/salal and western hemlock/salal-dwarf Oregon grape associations. Priority: Medium.
- Cell 24. Western hemlock/Pacific rhododendron associations. Priority: Medium.

Tan Oak Zone:

- Cell 28. Moist tanoak forests (tanoak-bigleaf maple-canyon live oak/swordfern, tanoak, and tanoak/evergreen huckleberry-rhododendron-salal associations. Priority: Low.

**2. Uniqueness and Size.** The Bobby Creek RNA represents an ecologically functional old-growth system with minimal human-caused disturbance. The following features distinguish this area as unique:

- The vegetation composition meets the PNW447 description of an ecological old-growth system (1986).
- The area is the largest block of unaltered forest representing the Douglas fir/tan oak series in the Medford District and possibly in western Oregon.
- The area is large enough (1,916 acres) to function as an independent ecological system, supporting species that range over a large area and require diverse habitat.
- The area comprises a complete watershed system, i.e., tertiary, secondary, and primary drainages are represented, as well as undisturbed riparian areas.
- The area provides a forum for a paired watershed analysis of a harvested and un-harvested drainage.

Given the above-mentioned factors, the Bobby Creek RNA provides a sound baseline for comparison when determining the success of implementing the proposed old growth management activities identified in the Record of Decision and Resource Management Plan (1995). Additionally, the RNA affords an opportunity to better understand the ecological interactions of functional forest communities with minimal levels of human disturbance.

**B. Management Objectives.** The main goal is to preserve natural features in as nearly an undisturbed state as possible for scientific and educational purposes. Natural processes should dominate, although deliberate manipulations which simulate natural processes are allowed in specific cases.

**1. Oregon Natural Heritage Plan (ORNHP) Cells and Natural Systems.** The primary management objective is to preserve the ORNHP Ecosystem Cells occurring within the RNA and the natural systems and ecological processes for which Bobby Creek RNA was established.

**2. Special Status Species.** The secondary management objective is to preserve and maintain the special status species that occur in the RNA. These species include:

- Northern Spotted Owl (*Strix occidentalis caurina*)  
Federal Status: Threatened  
State Status: Threatened  
ORNHP List: 1 \*
- Northern Goshawk (*Accipiter gentilis*)  
Federal Status: Species of Concern  
State Status: Critical  
ORNHP List: 2\*
- Pileated Woodpecker (*Dryocopus pileatus*)  
Federal Status: Bureau Tracking  
State Status: Vulnerable  
ORNHP List: 4\*
- Western Bluebird (*Sialia mexicana*)  
Federal Status: Bureau Tracking  
State Status: Vulnerable  
ORNHP List: 4\*
- Tailed Frog (*Ascaphus truei*)  
Federal Status: Bureau Tracking, Former Federal Candidate  
State Status: Vulnerable  
ORNHP List: 2\*
- Clouded Salamander (*Aneides ferris*)  
Federal Status: Bureau Tracking  
State Status: Undetermined Status  
ORNHP List: 3\*
- Woodland mild-vetch (*Astragalua umbraticus*)  
Federal Status: Former Bureau Tracking  
State Status: Rare  
ORNHP List: 4\*

The following species occur within 1 airmile and are likely present in the RNA:

- Bensonia (*Bensoniella oregona*)  
ORNHP List: 1\*
- California globe-mallow (*Iliamna latibracteata*)  
ORNHP List: 2\*

\*Criteria for ORNHP lists (ORNHP, 2001):

- |  |
|--|
| <p><u>List 1</u>: Taxa that are threatened with extinction or presumed to be extinct throughout their entire range.</p> <p><u>List 2</u>: Taxa that are threatened with extirpation or presumed to be extirpated from the state of Oregon.</p> <p><u>List 3</u>: Species for which more information is needed before status can be determined but which may be threatened or endangered in Oregon or throughout their range.</p> <p><u>List 4</u>: Taxa that are of conservation concern but are not currently threatened or endangered.</p> |
|--|

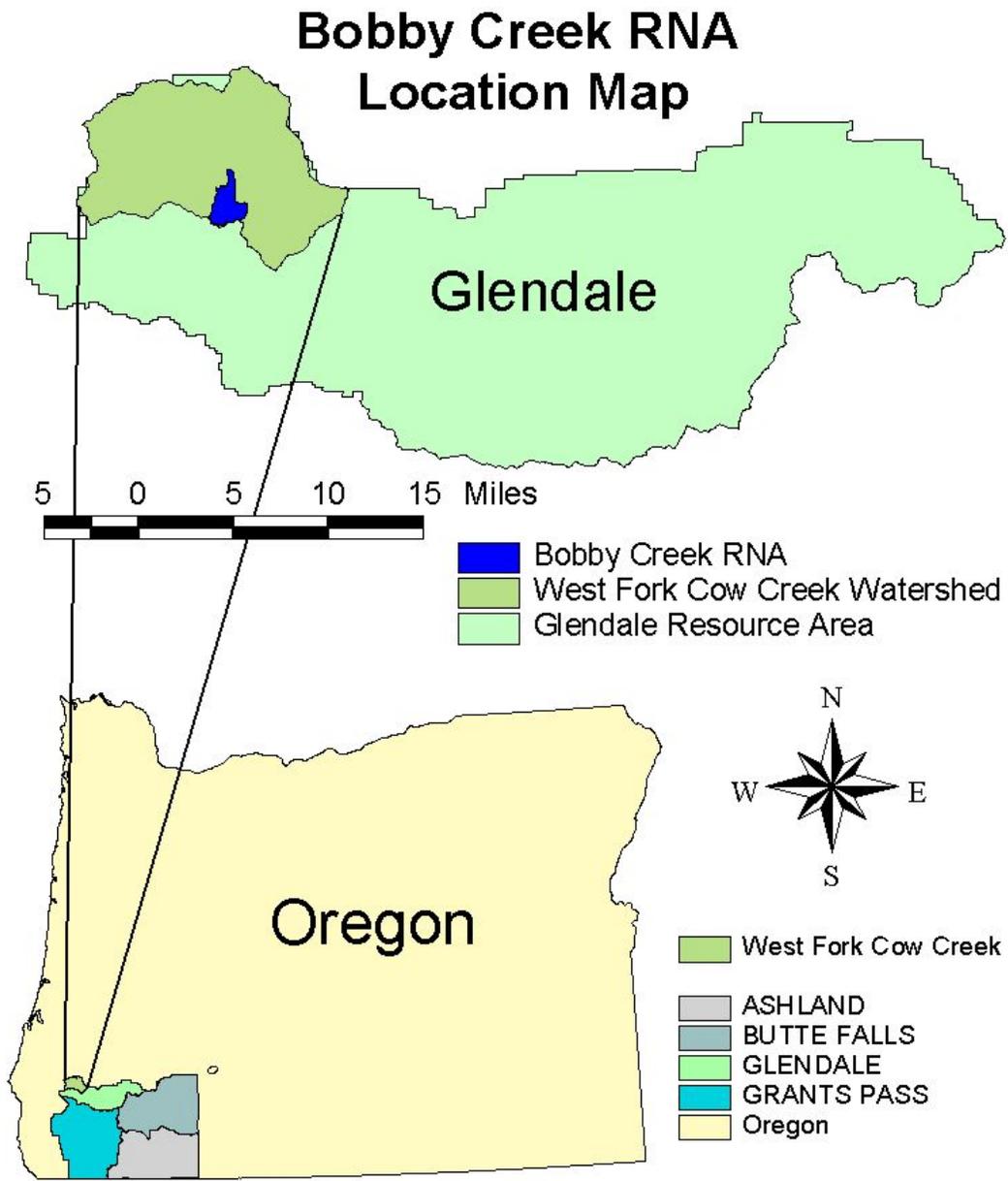
**3. Research and Education.** The third management objective is for the RNA to serve as an area of reference for the study of succession, as a baseline for measuring long-term ecological changes, and as a standard for comparing the results of manipulative management and its effects on forest, stream, and special status species population health.

### III. NATURAL AREA AND ELEMENT DESCRIPTIONS

#### A. Bobby Creek RNA Description.

**1. Location.** The Bobby Creek drainage is situated in the Glendale Resource Area of the Medford District of the BLM in Douglas County, Oregon (Figure 1). The RNA totals 1,916 acres within the West Fork Cow Creek watershed, part of the Umpqua River basin. The RNA is located in T 32S, R 9W, sections 2, 10, 11, 13, 14, and 15. Bobby Creek is bounded by the West Fork Cow Creek Road north of section 2, the Bobby Walker Road west of sections 10 and 15, and the Kelsey Mule Road on the extreme south end of sections 14 and 15. The east side of the Bobby Creek drainage is not bounded by roads.

**Figure 1 Location Map**



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

**2. Site History.** The following Bobby Creek site history has been drafted by David D. Reed:

The Bobby Creek area has no documented human disturbance until 1935, when the Civilian Conservation Corps (CCC) built a road into the area southeast of section 14. The first timber sale occurred in 1962 when the BLM put up the Bobby Creek timber sale. Two regeneration harvests and several partial cuts were carried out in the southeast corners of both sections 14 and 15. In 1968, the Calvert Peak timber sale prescribed regeneration harvests in the western portion of sections 10 and 15. Two additional sales, in the early 1980's and 1988, removed much of the remaining timber from units that had been partially cut during previous sales. New roads constructed during these sales are currently blocked or gated. Three regeneration harvest sales in the western portion of the basin occurred in 1992. No recent logging has occurred in the eastern portion of the basin.

In the early 1990s, a primitive trail was constructed to facilitate access to the stream monitoring station at the convergence of the east and west forks of Bobby Creek.

**3. Aspect and Elevation.** The Bobby Creek RNA is predominated by northern aspects, though warmer aspects are also present. The area encompasses a wide range in elevation, 1800-3499 ft (549-1066 meters).

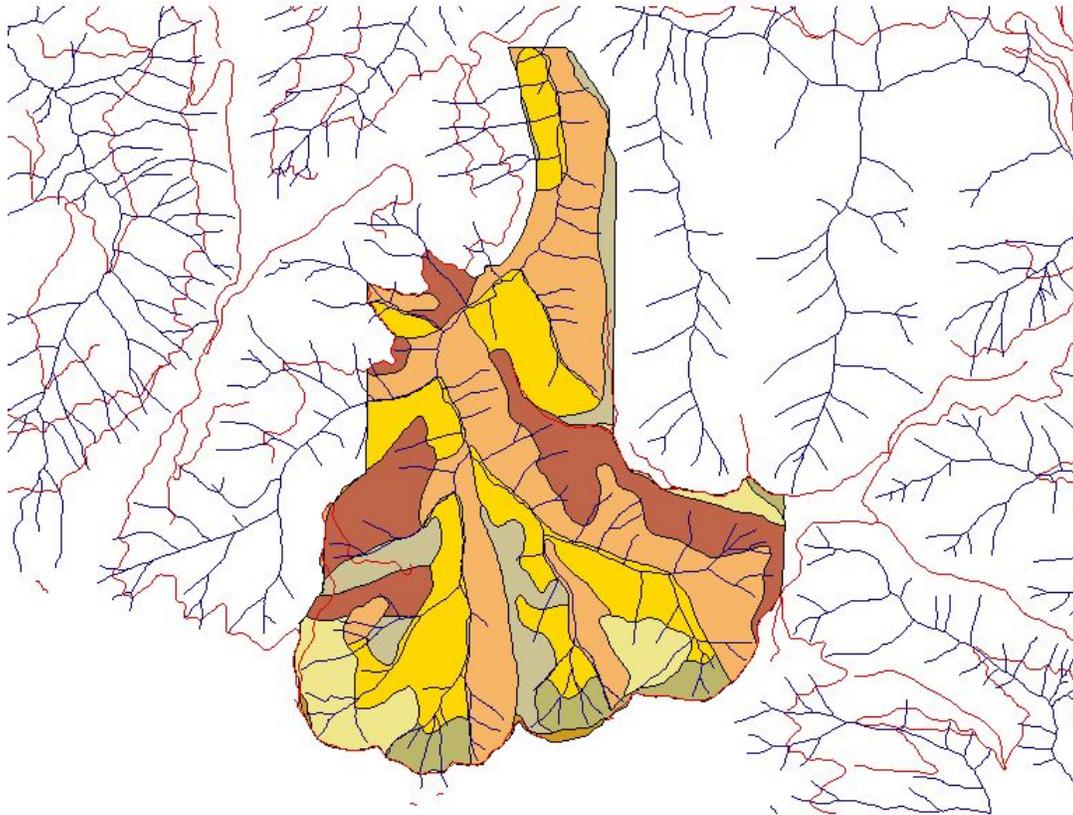
**4. Geology.** The Bobby Creek drainage occurs within the Dothan Formation, part of the Klamath Mountains Geologic Province. The Dothan Formation (late Jurassic) consists of both metamorphosed sediments and volcanics. Bobby Creek itself runs through metasediments, mostly sandstones and siltstones.

**5. Climatic Conditions.** Due to its location in the north-south transition between temperate and Mediterranean systems, the climate of the Bobby Creek area is influenced both by marine air and colder, dry, inland highs, a feature typical of southern coast range transitional ecosystems. Average precipitation in the area is 60-80 inches (152-203 cm) per year.

**6. Soils.** Variation in the hardness, grain, and chemical composition of sediments has produced a variety of soils in the area (Figure 2). Soil depths range from over 40 inches to less than 12 inches. Some soils are buried in colluvial rock and are most likely skeletal. Rainfall, clouds, and fog do not fully compensate for low soil moisture holding capacity; therefore, vegetation patterns tend to reflect soil depth and water availability.

**7. Hydrology.** The Bobby Creek basin is a sub-basin within the West Fork Cow Creek hydrologic unit of the Glendale Resource Area. It contains a complete watershed system, i.e., primary, secondary, and tertiary drainages. The east fork of Bobby Creek, a sub-basin within the Bobby Creek basin, is hydrologically unaltered, in contrast to the adjacent drainages, which have been harvested for timber.

**Figure 2 Soils Map**



 Streams

 Roads

**Bobby Creek RNA Soils**

 Acker-Norling complex, 30-60% south slopes

 Kanid-Atring complex, 60-90% north slopes

 Atring very gravelly loam, high elevation, 60-90% slopes

 Atring-Vermisa complex, 60-90% south slopes

 Acker-Norling complex, 30-60% north slopes

 Zalea-Pyrady complex, 15-30% slopes

 935F



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

**8. Riparian Ecology.** The riparian zone of the east fork of Bobby Creek is intact due to the absence of road construction and timber harvest activity. Old growth conifer species, including Douglas-fir (*Pseudotsuga menziesii*), Western red cedar (*Thuja plicata*), and Pacific yew (*Acer circinatum*) are major overstory components. Stream conditions are typical of those found in undisturbed forests: abundant large woody debris, a high level of habitat diversity, minimal sedimentation, and cool water temperatures during the summer.

**9. Vegetation.** The RNA lies in the transition area between the Klamath Mountain Ecoregion and the Oregon Coast Range Ecoregion. Vegetation in the area is representative of both regions. Both xeric and mesic plant communities are present in a broad range of age classes. Elevational differences within the RNA provide niches for Western Red Cedar, Western Hemlock, Tanoak and Douglas Fir Series. Intermittent episodes of fire have produced a matrix of stands with differing age classes and community types. The fire history of the basin is reflected by the distribution of several stands of old-growth occurring on the upper slopes of the drainage and within the riparian zone of the creek, with an array of age classes occupying the mid-slopes.

The following plant series (Figure 3) and associations (Figure 4), as described by Atzet (1996) are represented in the RNA:

Tanoak (LIDE3) Series:

- Tanoak-Big Leaf Maple-Canyon Live Oak/Western Sword-Fern (LIDE3-ACMA3-QUCH2/POMU)
- Tanoak-Douglas Fir-Canyon Live Oak/Dwarf Oregongrape (LIDE3-PSME-QUCH2/BENE2)
- Tanoak-Douglas Fir/Salal-Dwarf Oregongrape (LIDE3-PSME/GASH- BENE2)
- Tanoak-Douglas Fir/Salal-Pacific Rhododendron (LIDE3-PSME/GASH-RHMA3)
- Tanoak-Douglas Fir/Salal-Evergreen Huckleberry (LIDE3-PSME/GASH-VAOV2)

Douglas Fir (PSME) Series:

- Douglas Fir-Canyon Live Oak/Dwarf Oregongrape (PSME-QUCH2/BENE2)
- Douglas Fir/Dwarf Oregongrape/Western Sword Fern (PSME/BENE2/POMU)
- Douglas Fir/Salal-Pacific Rhododendron (PSME/GASH-RHMA3)

Western Hemlock (TSHE) Series:

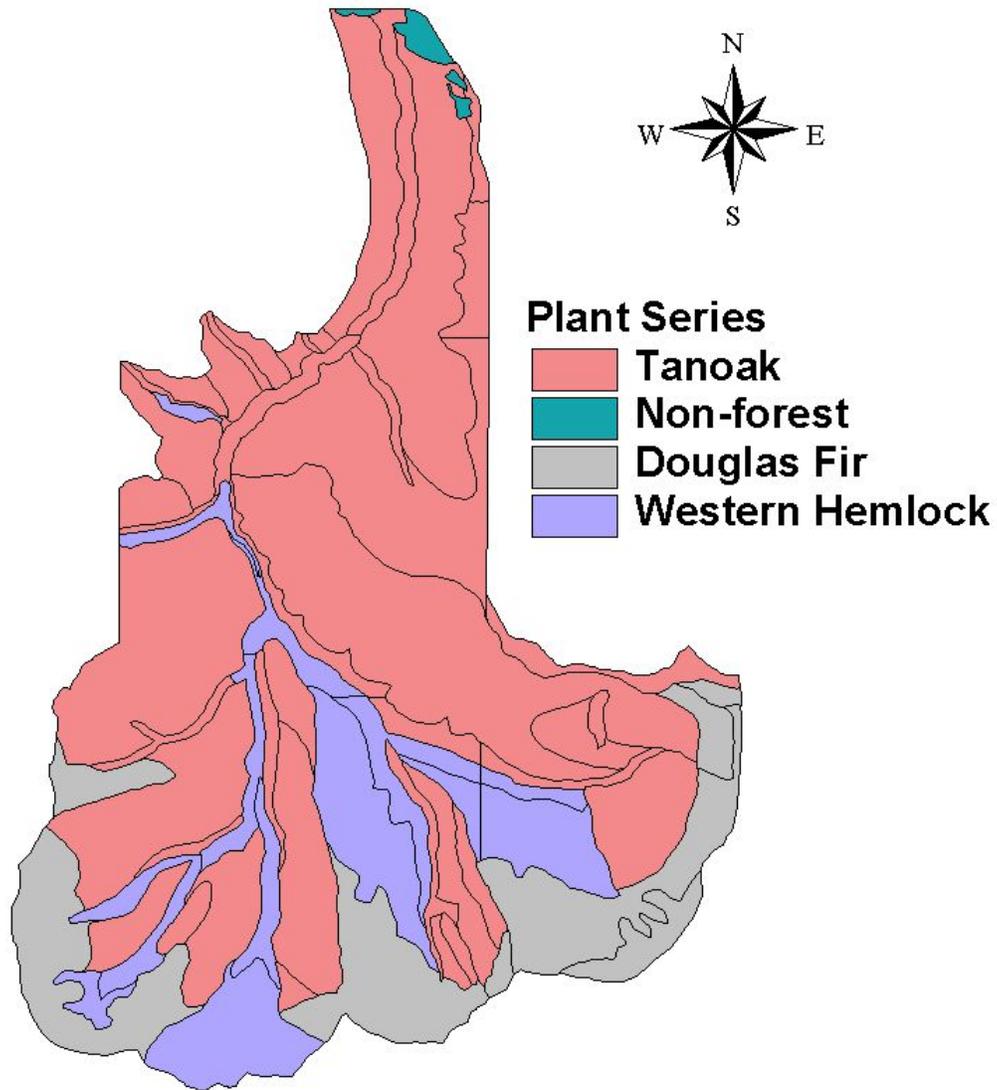
- Western Hemlock-Western Red Cedar/Pacific Rhododendron (TSHE-THPL/RHMA3)
- Western Hemlock/Salal/Western Sword Fern (TSHE/GASH/POMU)
- Western Hemlock/Pacific Rhododendron-Salal (TSHE/RHMA3-GASH)

Non-Forest:

- Canyon Live Oak (QUCH2)

**Figure 3 Plant Series Map**

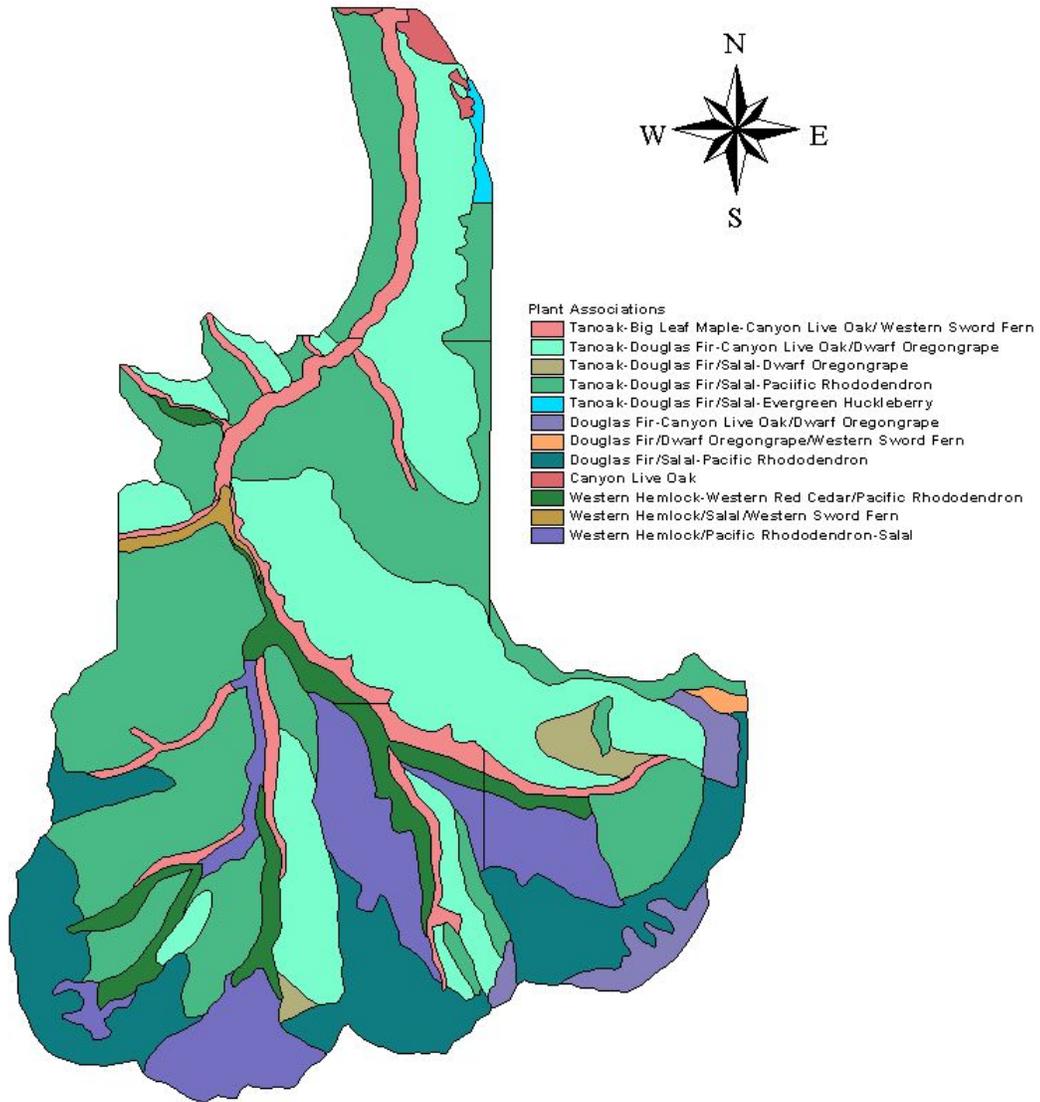
## Bobby Creek RNA Plant Series



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

**Figure 4 Plant Associations Map**

# Bobby Creek RNA Plant Associations



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

**10. Fisheries.** Bobby Creek is one of very few streams in the Medford District that has been minimally affected by timber harvest, road construction, and other land uses that are known to adversely affect streams and the native species they support. Use of the Klamath Province/Siskiyou Mountains Matrix of Factors and Indicators (The National Marine Fisheries Service, Environmental and Technical Services Division Habitat Conservation Program, 1996) reveals that fish habitat on the main stem, east and west forks of Bobby Creek is in proper functioning condition. Summer water temperature, one of the most important limiting factors for salmonids in southwest Oregon, is consistently less than 60°F, even during drought years. Habitat analysis, using aquatic macro invertebrates as indicators, suggests that habitat integrity and complexity in the east and west forks of Bobby Creek is high to very high (Aquatic Macroinvertebrate Monitoring Reports, 1991-1997).

Cutthroat trout and sculpin are the only fish species known to inhabit Bobby Creek. It is likely that both species have been genetically isolated from West Fork Cow Creek fish populations for several thousand years by a large rock cascade about ¼ mile from the mouth, which may have allowed these species to become genetically unique.

**11. Wildlife.** The Bobby Creek RNA has several significant wildlife habitat values due to the large amount of undisturbed and unfragmented old growth conifer forest, the high quality riparian zones, and the wide elevational range it encompasses. Important wildlife species observed in the area include:

- Northern Spotted Owl (*Strix occidentalis caurina*)
- Northern Goshawk (*Accipiter gentilis*)
- Pileated Woodpecker (*Dryocopus pileatus*)
- Western Bluebird (*Sialia mexicana*)
- Tailed Frog (*Ascaphus truei*)
- Clouded Salamander (*Aneides ferris*)
- Red Tree Vole (*Arborvillus lorigicaudus*)
- Umpqua Cutthroat Trout (*Onchorynchus clarki clarki*)

In addition to the above species, potential habitat exists for the following species, although direct observations have not been recorded:

- Bald Eagle (*Haliaeetus leucocephalus*)
- Marbled Murrelet (*Brachyramphus marmoratum*)
- Townsend's Big-eared Bat (*Corynorhirus townsendii*)
- Pacific Fisher (*Martes pennati*)
- Fringed Myotis (*Myotis thysanodes*)
- American Marten (*Martes americana*)

A cursory examination of herpetofauna revealed six species in close proximity:

- Tailed Frog
- Clouded Salamander
- Dunn's Salamander
- Western Red-backed Salamander
- Del Norte Salamander
- *Ensatina*

Two pairs of northern spotted owls, an obligate old-growth species, are currently nesting within Bobby Creek RNA. The area also supports a wide variety of birds associated with coniferous and hardwood forests, including many of the neotropical migrant species found in the Klamath Province. Roosevelt elk, black-tailed deer, black bear, cougar, and ringtail are also found in the area.

**12. Timber Management and Transportation.** Thinning of young stands bordering the RNA is planned under the Key Elk timber sale. Edge effects due to past clearcuts along the RNA include windthrow to border trees, as well as temperature and light increases. These threats may disrupt the ecological processes for which the area has been dedicated. There has been no clearcutting adjacent to the RNA since 1991 and it is no longer a BLM harvesting practice. Road construction for bordering timber activities create further access to the area and may have adverse effects on wildlife, possibly introducing non-native vegetation, including noxious weeds. However, due to past harvest activities most of the transportation infrastructure is present and it is not anticipated that any additional road construction would occur.

**B. Elements and Element Occurrences.** Three terrestrial ecosystem cells as defined by the Oregon Natural Heritage Plan (PRNHP, 1998) are represented within Bobby Creek RNA. The cells are currently protected under RNA designation and are comprised of:

Western Hemlock Zone:

- Cell 23. Western hemlock-tanoak/Pacific rhododendron, western hemlock-incense cedar/salal and western hemlock/salal-dwarf Oregon grape associations. Priority: Medium.
- Cell 24. Western hemlock/Pacific rhododendron associations. Priority: Medium.

Tan Oak Zone:

- Cell 28. Moist tanoak forests (tanoak-bigleaf maple-canyon live oak/swordfern, tanoak, and tanoak/evergreen huckleberry-rhododendron-salal associations. Priority: Low.

**C. Surrounding Land Uses.** Much of the lands surrounding the Bobby Creek RNA have been in timber production for decades. Clearcuts of various ages occur along the

boundaries, resulting in fragmentation of the forest. The development of roads associated with harvest practices has indirectly impacted the Bobby Creek area by creating barriers to the dispersal and mobility of wildlife species and disruption of ecological processes. In addition, some non-native plant species have been introduced to the area via road maintenance and construction activities.

## IV. MANAGEMENT CONSIDERATIONS

**A. Introduction.** Based on the ecological requirements of old growth Douglas Fir/Western Hemlock forest, and the management objectives developed for the Bobby Creek RNA, fire management and public use are currently the primary management issues in the area. The following is a statement of management policy, current information, and proposed management for the area.

### B. Logging

- **Policy**

The Bobby Creek RNA is designated as not available for timber harvest under the Medford District Record of Decision and Resource Management Plan (1995). Timber harvest and silviculture activities are prohibited unless they are a component of an approved research project. Hazard trees will not be knocked or cut down unless an emergency situation occurs. Downed trees will not be removed from the site. Any trees cut for trail construction are to remain on site. Firewood gathering is prohibited. Natural ecological processes will be allowed to resume in order to provide for monitoring of seral stage development and future research.

- **Current Information**

As illustrated in Table 1, eight units encompassing 176 acres, have been harvested within Bobby Creek RNA.

Table 1: Summary of Harvested Units			Denudation Date	Replant Date
Unit #	Key #	Acres		
32-9-2-002	130936	22	11-01-70	01-15-71
32-9-2-012	131805	13	01-01-85	03-23-90
32-9-11-008	130985	23	04-01-87	03-23-90
32-9-13-006	131053	15	06-01-70	11-01-71
32-9-14-005	131063	25	04-01-88	04-17-90
32-9-14-007	132079	24	06-01-71	11-01-71
32-9-15-004	131070	29	06-01-62	05-01-69
32-9-15-017	132826	25	04-01-88	04-20-90

- **Management Action**

Management staff will work together on neighboring timber actions. Sale planners should notify RNA coordinators of nearby sales and discuss ways in which RNA objectives can be protected. Management projects will be modified and actions taken to reduce adverse affects on the RNA. Possible protective action includes feathering edges of cuts to avoid abrupt

habitat changes along the boundaries, using seed collected within the RNA for replanting units, cautioning timber operators, and timing cuts to reduce adverse effects to the RNA. Consideration should be given to providing connectivity to and from the RNA.

### **C. Insects and Disease**

- **Policy**

The Research Natural Area Coordinator may authorize any action taken against insects and disease to protect the features for which the RNA was established. Pest management activities will be directed as specifically as possible to target organism and induce minimal impact to other components of the ecosystem.

- **Current Information**

No information is available regarding insects and disease for the Bobby Creek area.

- **Management Action**

Surveys in the RNA will be conducted on a regular basis by knowledgeable individuals to detect early signs of pest and disease outbreaks. Timber and silviculture staff working in adjacent areas will notify the RNA Coordinator if any signs of infestation or disease arise locally. Monitoring will be conducted if outbreaks occur.

### **D. Fire Management**

- **Policy**

The use of prescribed fire would be limited to the RNA boundary ridgeline in order to protect one or more unique values of the RNA. Prior to the implementation of treatments, associated costs and environmental impacts of using prescribed burning to protect and restore the unique terrestrial and aquatic ecosystem, would be assessed. Periodic fuel treatments in ridgeline boundary units would be needed to maintain fire protection for the RNA. Prescribed burning would adhere to smoke management and air quality standards of the Clean Air Act and State Implementation Plan. (USDI 1995).

Methods for fuel reduction treatments would be examined in environmental assessments before implementation within the Bobby Creek RNA. Fuel treatments proposed would be based on fire hazard and risk assessments. These assessments consider hazard, risk and values at risk.

Hazard is defined by a fire's ability to spread and thus the fire's resistance to control once a wildfire has ignited. Hazard is rated using a numerical points system for each of the following factors: Slope, Aspect, and Position on Slope, Adjacent Fuel Model, Ladder Fuels and estimated fuel loadings following the thinning/brushing treatments. A points summary is then calculated and ration of high, moderate or low is assigned.

Risk is defined as the source of ignition. A rating of high, moderate or low is assigned based on human presence and use and on lightning occurrence.

Values at risk are based on a consideration of human and resource values within planning areas. Conditions considered include land allocation, special use areas, human improvements/monetary investment, residential areas, agricultural use, structures present, soil vegetative conditions and wildlife habitat. This assessment ranks the values at risk in a unit at high, moderate or low.

## **Fire Suppression**

The Bureau of Land Management has a master cooperative fire protection agreement with the Oregon Department of Forestry (ODF). This agreement gives the responsibility of fire protection of all lands within the Bobby Creek RNA to the Oregon Department of Forestry. This contract directs ODF to take immediate action to control and suppress all fires. Their primary objective is to minimize total acres burned while providing for fire fighter safety. The agreement requires ODF to control 94 percent of all fires before they exceed 10 acres in size.

Some fire suppression techniques will not occur within the Bobby Creek RNA in order to minimize disturbance to the unique values of the RNA. Suppression activities would be primarily limited to hand line construction and water drops. All vehicles are restricted to existing roads, the use of tractors/dozers is not allowed within the RNA, and Bobby Creek is not to be utilized as a water source. The use of retardant will be minimized, and excluded from all waterways and riparian areas. Retardant drops maybe used within the RNA if: (1) fire fighter safety is a concern, (2) if wildfire would spread beyond the RNA, or (3) in order to limit or prevent a stand replacement fire.

- **Current Information**

Fire has periodically swept through the Bobby Creek area. Though the exact dates of past fires are not known, many of the older trees within the RNA have fire scars.

- **Management Action**

The Bobby Creek Research Natural Area will be allowed to regenerate without human intervention. No post-wildfire treatments will be permitted, outside of the described ridgeline fuel treatments above. Known sites of special status plant populations will be buffered prior to fuel treatments per the current management recommendations. No burned timber will be salvaged. The natural regeneration process will be monitored.

## **E. Domestic Grazing**

- **Policy**

Grazing is prohibited within the RNA.

- **Current Information**

Grazing does not occur within the Bobby Creek drainage or within the nearby area. The topography (steep terrain) of the area makes it highly unlikely that grazing will be proposed for the area in the future.

- **Management Action**

No management action required.

## **F. Mining**

- **Policy**

Surface occupancy and use is prohibited within the RNA by the Medford District Record of Decision and Resource Management Plan (1995).

- **Current Information**

No claims exist within the Bobby Creek RNA and as the area is not considered to contain significant mineral resources, no future claims are expected.

- **Management Action**

A withdrawal from mineral entry is the recommended management action.

## **G. Public Use**

- **Policy**

Research Natural Areas must be protected from activities that directly or indirectly modify ecological processes. Maintenance of unmodified conditions and natural processes is the prime management goal. Incidental dispersed use is permitted, but recreational use of the area will not be encouraged. Camping, collecting of forest products, and other uses that threaten or interfere with research, educational opportunities, or other purposes for which the RNA was established, are prohibited. Trail construction or reconstruction will be permitted only if required to meet the needs of research, for educational purposes, or to protect RNA values and must be approved by the RNA Coordinator. Any trails within the RNA will not be mapped for public use. The information will be given to researchers when appropriate. The use of the RNA by responsible scientists and educators is encouraged. Access to the RNA by parties external to the BLM must be authorized and approved by the Field Manager, and must conform to conditions specified in approved study plans and/or cooperative agreements.

- **Current Information**

### Research

Paired stream monitoring has been in place since July of 1993. The monitoring devices are powered by an RV battery charged by a solar panel bolted to a mature Douglas-fir at the confluence of the east and west forks. Water temperature and stage are recorded at 15-minute intervals. A hydrology crew samples streamflow of the two forks every three to four weeks and pairs this data with the stage and temperature data. Air temperatures at 5 feet, 25 feet, 50 feet, and 75 feet above creek level are also recorded at 15-minute intervals. This data is used to determine microclimate conditions within the riparian zone.

A remote Data Logging Rain Gage is located in an open area within the RNA and records precipitation. The precipitation data is used in conjunction with the water flow and temperature data to determine the response of the two basins to major storm events. The information serves as an indicator of the effects of roads and timber management on the west fork basin, with the undisturbed east fork basin functioning as a control. The long-term goal of the monitoring is to collect baseline data that can be used to compare managed watersheds throughout the district to a relatively undisturbed watershed under natural conditions.

### Trails

A primitive research trail runs south from road 32-9-15.1 to the east and west fork convergence of Bobby Creek where a water monitoring station is located. BLM personnel established this trail in the early 1990s to access the stream monitoring area. The trail is currently used primarily by BLM personnel.

- **Management Action**

BLM scientists will cooperate in research conducted by scientist from outside the BLM whenever possible, keep informed of the nature and progress of their work, and ensure that RNA values are maintained. Scientist conducting research will file copies of all research data, reports and other pertinent document with the Field Manager.

## **H. Roads and Utility Rights of Way**

- **Policy**

New road construction as well as all forms of off-road vehicle use is prohibited. New rights of way will not be permitted.

- **Current Information**

There are two native surface roads that enter the Bobby Creek RNA. BLM road 32-9-15.3 enters from the southwest at the Bobby Saddle Helipond and follows the RNA boundary until it terminates at a clearcut in the west central portion of the RNA. The road is currently gated and is used exclusively by BLM personnel. BLM road 32-8-7 enters from the east side of the RNA, following the boundary until it splits into a main fork veering west into the interior of the RNA and a jeep road, which heads north a short distance paralleling the eastern boundary. Travel on this road is currently blocked by a rock slide shortly after its junction with the Bobby Creek Access Road (32-8-9.2). Consequently, road 32-8-7 is accessible only by foot.

- **Management Action**

Road maintenance on any of the roads within the RNA or bordering the RNA will not use exotic species for road stabilization projects. Culverts and water ditches on these roads will be checked as frequently as possible to avoid excess runoff during storms. Coordination with District road engineers is recommended to keep current with all proposed road maintenance and construction activities.

## I. Hunting, Fishing and Trapping

- **Policy**

The management of fish and wildlife populations is controlled by the Oregon Department of Fish and Wildlife. Regulations for hunting, fishing, and trapping are set on a yearly basis. The Bobby Creek drainage is within the Powers Wildlife Management Unit, #26. Hunted species include: bear, elk, cougar, silver gray squirrel, rufted grouse, blue grouse and mountain quail. Trapped species include: bobcat, bear, otter, weasel, striped skunk, spotted skunk, coyote, red fox, raccoon, and gray fox. Fished species include: cutthroat trout, winter steelhead, and coho salmon. Hunting and fishing will not be encouraged in the RNA because the primary goal of the area is to protect functioning ecosystems with minimal human interference.

- **Current Information**

Regulations regarding seasons, bag limits, stream stocking, licensing, and technique are dictated by the Department through Fish and Wildlife Commission and are applicable to all lands within the state including private property.

- **Management Action**

Due to the limited road access into the RNA, hunting, fishing, and trapping are unlikely to occur on a large scale within the area. The activities are permitted, but not encouraged.

## J. Introduced Species

- **Policy**

Present guidelines under the 1995 Resource Management Plan dictate management activities which contain and/or reduce noxious weed infestations and avoid the introduction or spread of noxious weeds on BLM-administered land. The Federal Land Policy and Management Act of 1976 directs federal agencies to “take any actions necessary to prevent unnecessary or undue degradation of the lands.”

- **Current Information**

Yellow starthistle (*Centaurea solstitialis*), tansy ragwort (*Senecio jacobaea*) St. Johnswort (*Hypericum perforatum*), knapweed (*Centaurea* sp.) and scotch broom (*Cytisus scoparius*) are species known to exist along roads bordering the area. No known populations of noxious weeds are located within the RNA.

- **Management Action**

Plant inventories will be conducted within the RNA to determine whether noxious weeds are present. No other management actions are needed at this time. If control becomes necessary, it will be implemented in accordance with Medford District guidelines.

## **K. Special Status Plants**

- **Policy**

The Endangered Species Act (USDI, 1973) governs and provides for the conservation of listed and proposed species, and their habitats on all federal lands. The BLM policy as stated in BLM Manual 6840 regarding special status species including federally listed, state listed, and species designated as sensitive, is to protect and conserve, manage their habitat to promote recovery, and ensure that Bureau actions will not contribute to the need to list sensitive or state listed species.

- **Current Information**

Woodland mild-vetch (*Astragalua umbraticus*) is the only special status plant known to occur in the RNA. Bensonia (*Bensoniella oregona*) and California globe-mallow (*Iliamna latibracteata*) occur within one airmile and are likely present within the RNA.

- **Management Action**

Plant inventories should be conducted by the Glendale Resource Area and possibly outside sources within the RNA in the spring and/or fall to determine the presence and status of special status plants. Opportunities for enhancement will be identified. Any future manipulation will be monitored to evaluate effects.

## **V. RESEARCH AND MONITORING**

### **A. Definition and Role of Monitoring**

Monitoring is a procedure to gauge, check, track, or test for specified purposes. It provides information by which management actions may be evaluated. Monitoring adds to the body of scientific knowledge regarding elements and element occurrences, enhances knowledge about the interrelationships of various physical and biological variables, and thus increases management capabilities. An adequate system of monitoring is essential in determining whether management objectives are being met. All types of monitoring activities must include the following steps:

1. Establish monitoring objectives.
2. Collect baseline information.
3. Implement and repeat monitoring procedures over time using consistent standardized procedures.
4. Analyze results relative to the baseline information and objectives.

### **B. Monitoring and Monitoring Needs**

Two types of monitoring are appropriate for the Bobby Creek RNA:

**1. Defensibility Monitoring** involves on-the-ground assessment of factors that affect the BLM's ability to protect the RNA and element occurrences within it. Defensibility monitoring includes evaluating existing and anticipated land use within and around the area and its potential for degrading element occurrences or their governing ecological processes,

such as looking for evidence of prohibited use, encroachment or degradation within the RNA and changes in activities in the surrounding area. The following defensibility monitoring will be completed by the Medford District for the Bobby Creek RNA as funding and resources are available:

- Inspect noxious weeds along roads bordering the RNA for any encroachment into the RNA on an annual basis.
- Evaluate surrounding area for fire risk, periodically.
- Track timber sale, silviculture activities, road construction and maintenance activities in surrounding area through Micro-storms, GIS databases, the Glendale road record file FIMMS (Facilities Information Maintenance Management System) and GTRN GIS files.
- Annual trail inspection would be completed by the Glendale Resource Area BLM and trail maintenance would be provided as needed.

**2. Compliance Monitoring** in the context of the management plan refers to communication and updating of information for the Bobby Creek RNA. This process requires informing and periodically contacting agencies and groups whose actions could affect the area. All branches of the BLM should be informed of the existence, location, management actions, objectives, and constraints pertaining to the area. Other agencies that regulate actions that may affect conditions present within the RNA should also be kept informed. Compliance monitoring can be accomplished by:

- putting the District on mailing lists for environmental reviews to the interested public, outside agencies, and area educational programs such as universities, colleges, high schools
- networking with key individuals
- making regular contacts with agencies
- participating in the preparation of planning documents, and
- setting a schedule for continued contact

Compliance monitoring activities, such as phone calls or personal contacts, would be documented. Information on who was contacted, position, date, phone number, and pertinent information should be noted and kept in the Bobby Creek RNA file. Compliance monitoring should be summarized and evaluated on an annual basis.

### **C. Definition and Role of Research**

The primary purpose of research would be to collect baseline information such as operation of the gauging station to allow for continuous collection of data on stream flow and water temperature. The definition of research is very similar to the definition of monitoring. However research findings would not necessarily, of themselves, indicate whether management objectives are being met.

Research may be completed by the Medford District, outside agencies, or university students. Research proposals will be reviewed on a case by case basis by the Medford District Botanist and for final approval by the Glendale Resource Area Field Manager. Efforts should be made to minimize effects of the research on the Natural Area, eliminate conflicts between research projects and provide the best information about the Natural Area and the research question. Potentially impacting activities associated with research, such as clipping of vegetation, use of increment borers, temporary shelters for instrumentation, flagging, permanent markers to relocate long-term plots, and tagging trees are may be appropriate but should be reviewed on a case by case basis.

College or graduate level research/educational use should be encouraged. Given the importance of Natural Areas and the importance of educating children to wise natural resource management, field trips for elementary through secondary education could be encouraged on a limited basis. An agency field person would always participate in group field trips. Care must be taken not to disturb ongoing research.

#### **D. Types of Research and Research Needs**

Two types of research are appropriate for the Bobby Creek RNA:

**1. Ecological Status Research** involves tracking species and communities relative to stated objectives. Attributes to be measured indicating the ecological status of RNA elements include population size, community composition, community structure, and area occupied. The following ecological status research is appropriate for Bobby Creek RNA:

- Continue collection of stream flow, water temperature information, and track other baseline elements over time.

Outside sources, such as other agencies or university research, could carry out the following ecological status research as approved by the Medford District BLM, such as:

- Research seral stage development.
- Research populations of Special Status species.
- Research aquatic macroinvertebrate species with sampling at approximate 5-year intervals (baseline data is available in fishery biologist's files).

**2. Management Treatment Research** involves tracking the response of an element occurrence to on and off-site management treatments. The purpose of management treatment monitoring is to assess the effectiveness of treatments. All on-site treatments should be monitored and employ proper experimental design, including an untreated control area in research experiments. Researching the effects of off-site management actions should be conducted whenever possible and prioritized by degree of potential impact. There are no specific management treatment research projects proposed or in progress as of May 2004.

## References

- Atzet, T., White, D., McCrimmon, L. A., Martinez, P. A., Fong, P. R., & Randall, V. D. (1996). *Field guide to the forested plant associations of southwestern Oregon*. (Technical Paper R6-NR-ECOL-TP-17-96). USDA Forest Service, Pacific Northwest Region.
- Federal Land Policy and Management Act of 1976
- Oregon Natural Advisory Council. (1998). *Oregon natural heritage plan*. Division of State Lands, Salem, OR.
- Oregon Natural Heritage Program (2001). *Rare, threatened and endangered plants and animals of Oregon*. Oregon Natural Heritage Program, Portland, Oregon.
- Pacific Northwest Interagency Natural Area Committee. (1990). *A Guide for Developing Natural Area Management and Monitoring Plans*.
- The National Marine Fisheries Service, Environmental and Technical Services Division Habitat Conservation Program. (1996). *Making endangered species act determinations of effect for individual or grouped actions at the watershed scale*.
- U.S. Department of Agriculture, Forest Service, Pacific Research Station. (1986). *Interim definitions for old growth douglas fir and mixed conifer forests in the Pacific Northwest and California*. Research Note PNW-477.
- U.S. Department of the Interior, Bureau of Land Management, Medford District Office. (1995). *Medford District Record of Decision and Resource Management Plan*. Medford, OR.
- U.S. Department of the Interior, Bureau of Land Management, Oregon State Office. (1987). *Supplemental program guidance for land resources*. Portland, OR.