

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Establishment Report
SILVER LAKE ENCLOSURE RNA
Fremont National Forest



SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Silver Lake Exclosure Research Natural Area

Fremont National Forest

Lake County, Oregon

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met and that boundaries are clearly identified in accordance with FSM 4063.21, Mapping and Recordation and FSM 4063.41 5.e(3) in arriving at this recommendation.

Prepared by Dick Vander Schaaf Date 10/31/95
Dick Vander Schaaf,
The Nature Conservancy

Recommended by Jay Dunbar Date 11/8/95
Jay Dunbar, Acting District Ranger,
Silver Lake Ranger District

Recommended by Chuck R. Graham Date 1/9/96
Chuck Graham, Forest Supervisor,
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Recommended by Tom J. Mills Date 1/30/96
Tom J. Mills, Director,
Pacific Northwest Research Station

ESTABLISHMENT RECORD FOR
SILVER LAKE ENCLOSURE RESEARCH NATURAL AREA
WITHIN FREMONT NATIONAL FOREST
LAKE COUNTY, OREGON

INTRODUCTION

Silver Lake Enclosure Research Natural Area (RNA) is on the eastern edge of the East Cascades of Oregon, bordering the Basin and Range Physiographic Province. The site is in a transition area between coniferous forest and sagebrush steppe and has characteristics of both vegetative zones. The dominant natural community is a ponderosa pine (Pinus ponderosa)¹ savanna with western juniper (Juniperus occidentalis), mountain mahogany (Cercocarpus ledifolius), and bitterbrush (Purshia tridentata) prominent in the tree and shrub understory. Idaho fescue (Festuca idahoensis) is the most common bunchgrass in the RNA. The site is centered on a seasonal tributary of the West Fork of Silver Creek and also includes a half mile stretch of the West Fork. A notable feature of the proposed RNA is a deer and livestock enclosure that has been in place since 1963.

Land Management Planning

Silver Lake Enclosure RNA was proposed as a candidate RNA by the Fremont National Forest to meet two unfilled natural area cell needs for Ponderosa pine-western juniper/bitterbrush/Idaho fescue (Pinus ponderosa-Juniperus occidentalis/Purshia tridentata/Festuca idahoensis) and western juniper/big sagebrush/Idaho fescue (Juniperus occidentalis/Artemisia tridentata/Festuca idahoensis) (Oregon Natural Heritage Advisory Council 1993)². It was included as a candidate RNA in the FEIS for the Fremont National Forest (USDA Forest Service 1989a), in the Forest Plan (USDA Forest Service 1989b) and in the Record of Decision (USDA Forest Service 1989c).

Boundary adjustments to the proposed RNA in 1995 resulted in the inclusion of a stretch of West Fork Silver Creek within the designated area. The riparian zone of the creek contains a high priority, unfilled natural area cell need for mountain alder and Douglas spiraea (Alnus incana-Spiraea douglasii) (Oregon Natural Heritage Advisory Council 1993).

1 Nomenclature for vascular plants follows Hitchcock and Cronquist (1973).

2 Author's names in parentheses refer to references cited.

Silver Lake Exclosure includes the following RNA cell needs (or elements) in the East Slope Oregon Cascades Physiographic Province:

TERRESTRIAL ECOSYSTEMS

1. Western juniper/big sagebrush/Idaho fescue community.
6. Ponderosa pine-western juniper/bitterbrush/Idaho fescue community.

WETLAND AND AQUATIC ECOSYSTEMS

1. First to third order stream system in Western Juniper zone. (partial representation)
29. Riparian community dominated by mountain alder and Douglas spiraea, with snowberry if possible. (partial representation) (Oregon Natural Heritage Advisory Council 1993).

OBJECTIVE

The objective of the Silver Lake Exclosure RNA is to preserve in an undisturbed, by humans, condition the Ponderosa pine-western juniper savanna which is the research focus of the RNA. The RNA will serve as a reference area for study, as a baseline area for determining long-term ecological changes, and as a monitoring area to determine effects of management techniques and practices applied to similar ecosystems.

JUSTIFICATION

Silver Lake Exclosure RNA was selected to meet unfilled RNA cell needs for western juniper/big sagebrush/Idaho fescue and Ponderosa pine-western juniper/bitterbrush/Idaho fescue community types and a third order stream system in the western juniper zone. The site is representative of transition areas in the East Cascades which border the Basin and Range Province (Oregon Natural Heritage Advisory Council 1993).

PRINCIPAL DISTINGUISHING FEATURES

Silver Lake Exclosure RNA contains the following principal features:

1. Ponderosa pine/mountain mahogany (Cercocarpus ledifolius)-bitterbrush woodland: Ponderosa pine forms a sparse overstory for this community that is located on level ground along the western and southeastern portions of the natural area. The mountain mahogany is dense in some areas, forming a thicket where pine and other shrubs are excluded. Idaho fescue is the dominant grass.
2. Ponderosa pine-western juniper woodland: Western juniper is mixed with ponderosa pine north of the ephemeral creek drainage which bisects the natural area.

These woodlands are sparsely covered by pine and western juniper but have a relatively continuous cover of bitterbrush and mountain big sagebrush (Artemisia tridentata var. vaseyana) and a healthy cover of bunchgrasses dominated by Idaho fescue. Within the drainage there is relatively less western juniper and shrubs and more continuous cover of ponderosa pine; the seasonal stream adds habitat diversity to the site and evidence of wildlife is abundant here.

3. Western juniper/big sagebrush-bitterbrush/Idaho fescue: This community forms a broad band of vegetation north of where ponderosa pine first becomes present within the natural area. Herbaceous species are most diverse in this area with Erigeron bloomeri, Antennaria dimorpha, Balsamorhiza serrata, and Crepis acuminata being common. Portions of this area have very low overall densities of western juniper such that they are essentially sagebrush-bitterbrush grasslands.

4. Low sagebrush shrublands: Low sagebrush (Artemisia arbuscula) flats are prominent in the northern part of the RNA, in a rocky meadow south of the draw in the center of the RNA, and on the southern border of the site. In some areas the low sagebrush grows in association with bitterbrush while in other areas it is the only shrub present. Grasses in the low sagebrush flats include Sandberg's bluegrass (Poa sandbergii), Idaho fescue, and bluebunch wheatgrass (Agropyron spicatum).

5. West Fork Silver Creek: Over a half mile of West Fork Silver Creek is included within the proposed RNA. The stream reach contains high quality riparian vegetation dominated by mountain alder (Alnus incana) and Douglas spiraea (Spiraea douglasii). The riparian zone is quite narrow due to the narrow canyon the creek occupies. The canyon slopes are dominated by ponderosa pine and western juniper which also occur within the riparian zone of the creek. Silver Creek is a third order stream that flows from the foothills north of Sycan Marsh into the closed basin at Silver Lake, Oregon.

6. Deer and livestock fencing: The proposed RNA has been fenced from deer and livestock for approximately 35 years with the original purpose of the fencing being to establish an enclosed area to compare bitterbrush utilization by deer and livestock. The fencing resulted in protecting an ecological transition site that was located in a landscape which has been significantly altered by grazing and timber harvest.

LOCATION

Maps 1, 2, and 3 show the location of Silver Lake Enclosure RNA. The RNA is located in the Silver Lake Ranger District of the Fremont National Forest. The center of the RNA is at latitude 43°01' 10" north and longitude 121°06' 15" west. The 293 acre (119 ha.) site lies within Sections 17-20 Township 29 South, Range 14 East Willamette Meridian (Map 3).

Boundary

Basis of bearing is astronomic north. Basis of elevation is mean sea level as shown on the USGS 7.5 minute topographic quadrangle map Hager Mtn., Oreg. 1968.

Area

Total area for the Silver Lake Exclosure Research Natural Area is approximately 293 acres (119 hectares).

Elevations

Elevations range from 4800 feet (1463 m.) on the plateau portion of the RNA to 4540 feet (1384 m.) in the ravine which bisects the area.

Access

The Silver Lake Exclosure RNA is located on the northern edge of the Fremont National Forest (Map 2) approximately 5.5 miles (8.8 km.) south of Silver Lake, Oregon on County Road 4-11 which becomes Forest Road 27 at the boundary of the RNA. The RNA lies approximately 300 feet (100 m.) to the east of Forest Road 27 and runs east and south towards the western edge of the West Fork Silver Creek canyon. A dirt track leads to the exclosure off of Forest Road 27.

Maps

Silver Lake Exclosure RNA is located on the USGS 7.5 minute topographic quadrangle maps, Hager Mtn., Oreg. 1968. The Fremont National Forest Recreation Map, 1987, is useful for ownership and general access information, however, this map does not delineate the RNA boundaries.

Photos

The following aerial photos of the Silver Lake Exclosure RNA site are available in the Forest Supervisor's and District Ranger's offices:

Line 6 #3-37, Flight No. 81-173, Sept. 14, 1981

AREA BY TYPES

Vegetation of the RNA has been surveyed (Seyer 1981; Vander Schaaf 1994) during initial recommendation of the site for RNA status as well in preparation for drafting this document. The following determination of cover types and habitat types and their estimated covers have been made from the survey information and from air photo interpretation. Map 4 depicts the locations of the natural communities or associations described below.

The most current information regarding the forested portion of the RNA is described in the plant association guides of Volland (1976) and (Hopkins 1979). Five plant associations have been identified in the RNA (Map 4), all of which correlate to types described in Volland (1976), Hopkins (1979), and Kovalchik (1987).

Estimated

	Acres	Hectares
<u>SAF Cover Types</u> (Eyre 1980)		
237 Ponderosa pine	100	41
238 Western juniper	193	78
<u>Kuchler Types</u> (Kuchler 1966)		
10 Ponderosa shrub forest (<u>Pinus</u>)	293	119
<u>Plant Associations</u> (Hopkins 1979, Volland 1976)		
1) Ponderosa pine-juniper/mountain mahogany- bitterbrush-big sagebrush/fescue (<u>Pinus ponderosa-Juniperus occidentalis/ Cercocarpus ledifolius-Purshia tridentata- Artemisia tridentata/Festuca idahoensis</u>)	90	36
2) Juniper/bitterbrush/fescue (<u>Juniperus occidentalis/Purshia tridentata/ Festuca idahoensis</u>)	70	28
3) Big sagebrush-bitterbrush/bunchgrass (<u>Artemisia tridentata-Purshia tridentata/ bunchgrass</u>)	80	33
4) Low sagebrush/fescue--Bluegrass scabland complex (<u>Artemisia arbuscula/Festuca idahoensis--Poa sandbergii scabland</u>)	43	17
5) Mountain alder-Douglas spiraea (<u>Alnus incana-Spiraea douglasii</u>)	10	5
Total	293	119

PHYSICAL AND CLIMATIC CONDITIONS

Physical Conditions

Silver Lake Exclosure RNA is part of a narrow transition zone between the upland forests of the East Cascades Physiographic Province and the Basin & Range Province lying to the north and east. The RNA is centered on a small, intermittent drainage to the West Fork of Silver Creek, which runs into the Silver Lake playa. Topography of the site is mostly level or slightly sloped with the exception being the east-west running intermittent drainage running through the middle of the site and the canyon containing Silver Creek. The side slopes of the intermittent drainage are fairly gently sloped with almost no rock outcrops of any size present and the drainage itself slopes gradually towards the east. Silver Creek canyon is considerably steeper and has substantial rock outcrops.

Even though the region has a distinctive volcanic past there is little evidence of such at the featureless site other than the derivation of the underlying soils.

Climatic Conditions

The central Oregon climate is characterized by warm summers and cold winters. Most of the limited precipitation falls as snow during the winter with significant rains often falling during the spring as well. Summers are dry with evening thunderstorms occurring in July and August. Silver Lake Exclosure RNA is within the east Cascades Physiographic Province and receives typical central Oregon weather. Summer winds are predominantly from the northwest and are usually light to moderate. East winds may occur in the fall and spring, blowing at higher velocities and causing drying conditions that enhance the fire hazard for the season. During the winter, storms come in from the southwest bringing snow while occasional storms from the northwest bring frigid weather.

The closest recording NOAA weather station with complete yearly records is located in Summer Lake, Oregon, 18 miles (28.8 km) to the east of the RNA. A weather station situated at the Silver Lake Ranger Station is significantly closer to the RNA but it does not have consistent data to determine average conditions because of missed recordings at the station. Climatic conditions at Summer Lake should be a fair approximation for Silver Lake Exclosure RNA with differences between the two sites being attributed to the 600' (183 m) greater elevation at the RNA. The station receives an annual precipitation of 9.51 inches (24.16 cm) and the mean annual temperature is 51.8 F (11.0 C) (National Oceanographic and Atmospheric Administration 1992). It is likely that the RNA receives substantially more precipitation than the Summer Lake weather station. Over half of the precipitation falls between November and February. Summer high temperatures regularly reach into the 80's, while winter lows often dip into the 20's.

The monthly climatic data for Summer Lake averaged over the past 36 years is listed below (National Oceanographic and Atmospheric Administration 1992).

Climatic Records for Summer Lake, Oregon
Elevation 4193 feet (1336 m);
(National Oceanographic and Atmospheric Administration 1992)

Month	Temperature		Precipitation	
	F	C	inches	cm
January	34.8	1.6	.52	1.32
February	41.1	5.1	.41	1.04
March	44.5	6.9	.41	1.04
April	51.7	10.9	.70	1.78
May	61.9	16.6	.03	.08
June	66.5	19.2	.79	2.01
July	68.2	20.1	1.05	2.67
August	70.4	21.3	.84	2.13
September	61.1	16.2	.40	1.02
October	53.3	11.8	.95	2.41
November	38.0	3.3	.98	2.49
December	30.2	-1.0	2.43	6.17
Mean Annual	51.8	11.0		
Total Precipitation			9.51	24.16

DESCRIPTION OF VALUES

Flora

The flora of Silver Lake Exclosure RNA is representative of the transition zone between the East Cascades and Basin & Range physiographic provinces with elements of both provinces present. There are a number of plant associations represented at the RNA but the actual number of taxa is surprisingly small with many of the species being present in many of the habitats. The flora has not been systematically collected or studied other than those taxa encountered during a botanical inventory conducted during the course of the drafting of the Establishment Record. No state or federal threatened, endangered or sensitive plant species are known to occur within the RNA. Observations by Vander Schaaf (1994) have resulted in the following list of plants. The plant communities listed below refer to those noted previously on page 5.

The plant communities are characterized as follows:

1. Ponderosa pine-juniper/mountain mahogany-bitterbrush-sagebrush/fescue
2. Juniper/bitterbrush/fescue
3. Big sagebrush-bitterbrush/bunchgrass
4. Low sagebrush scabland complex

Riparian vegetation present along West Fork Silver Creek is included within plant community #1. Species identifications were determined from Hitchcock and Cronquist (1973) and trees were determined from Little (1979).

Scientific name	Common name	Plant Communities			
		1	2	3	4
TREES					
<u>Pinus ponderosa</u>	ponderosa pine	X	X		
<u>Juniperus occidentalis</u>	western juniper	X	X		
SHRUBS AND SUBSHRUBS					
<u>Alnus incana</u>	mountain alder	X			
<u>Artemisia arbuscula</u>	low sagebrush				X
<u>Artemisia tridentata</u> var. <u>vaseyana</u>	mountain big sagebrush		X	X	X
<u>Cercocarpus ledifolius</u>	mountain mahogany	X			
<u>Ceanothus velutinus</u>	sticky-laurel	X			
<u>Chrysothamnus viscidiflorus</u>	green rabbitbrush		X	X	
<u>Purshia tridentata</u>	bitterbrush	X	X	X	
<u>Ribes cereum</u>	squaw currant	X	X		
<u>Rosa woodsii</u>	Wood's rose	X			
<u>Spiraea douglasii</u>	Douglas spiraea	X			
<u>Tetradymia glabrata</u>	horse-brush		X	X	
FORBS					
<u>Achillea millefolium</u>	yarrow		X	X	X
<u>Agoseris glauca</u>	pale agoseris		X	X	X
<u>Antennaria dimorpha</u>	low pussy-toes	X	X		
<u>Arabis holboellii</u>	rockcress		X	X	
<u>Artemisia ludoviciana</u>	wormwood	X			
<u>Astragalus purshii</u>	Pursh's milkvetch			X	X
<u>Astragalus filipes</u>	basalt milkvetch				X
<u>Allium acuminatum</u>	tapertip onion			X	
<u>Balsamorhiza serrata</u>	serrate balsamroot			X	X
<u>Calochortus macrocarpus</u>	sagebrush mariposa lily	X	X		
<u>Castilleja sp.</u>	paintbrush		X	X	X
<u>Crepis acuminata</u>	long-leaved hawkweed			X	X
<u>Collinsia parviflora</u>	blue-eyed Mary			X	X
<u>Delphinium depauperatum</u>	larkspur				X
<u>Epilobium minutum</u>	fireweed	X	X		
<u>Erigeron bloomeri</u>	scabland fleabane				X
<u>Eriogonum ovalifolium</u>	oval-leaved buckwheat		X	X	
<u>Haplopappus bloomeri</u>	rabbitbrush goldenweed			X	X
<u>Leucocrinum montanum</u>	sand lily	X			
<u>Lewisia rediviva</u>	bitterroot				X
<u>Lomatium dissectum</u>	fernleaf lomatium				X
<u>Lupinus caudatus</u>	tailcup lupine		X	X	
<u>Lupinus lepidus</u> var. <u>aridus</u>	prairie lupine			X	X
<u>Microseris troximoides</u>	false agoseris				X
<u>Microsteris gracilis</u>	microsteris		X	X	X
<u>Mimulus sp.</u>	monkeyflower		X		
<u>Orobanche fasciculata</u>	clustered broomrape			X	
<u>Penstemon laetus</u>	gay penstemon	X	X		
<u>Phacelia heterophylla</u>	virgate phacelia			X	X

<u>Phlox hoodii</u>	Hood's phlox		X	X	X
<u>Potentilla sp.</u>	cinquefoil	X			
<u>Viola purpurea</u>	goosefoot violet		X	X	

GRAMINOIDS

<u>Agropyron spicatum</u>	bluebunch wheatgrass			X	
<u>Bromus tectorum</u>	cheatgrass			X	X
<u>Carex aquatilis</u>	aquatic sedge	X			
<u>Carex rossii</u>	Ross' sedge	X	X		
<u>Danthonia unispicata</u>	onespike oatgrass				X
<u>Festuca idahoensis</u>	Idaho fescue	X	X	X	X
<u>Glyceria borealis</u>	northern mannagrass	X			
<u>Koeleria cristata</u>	prairie junegrass		X	X	
<u>Poa sandbergii</u>	Sandberg's bluegrass				X
<u>Sitanion hystrix</u>	bottlebrush squirreltail	X		X	X
<u>Stipa occidentalis</u>	Western needlegrass		X	X	

Silver Lake Exclosure RNA has five natural communities represented within its boundaries (Map 4). These communities are arranged on a slight elevational gradient that displays a progression from the forested landscape of the East Cascades Physiographic Province to the sagebrush steppe of the Basin & Range. Soil depth is a key determinant of the plant community present at any specific location within the RNA. At the forest end of the spectrum of natural communities is the ponderosa pine-juniper/mountain mahogany-bitterbrush-sagebrush/fescue plant association. This community is well represented in the RNA and makes a relatively smooth transition to continuous ponderosa pine forest at the upper edge of natural area along the southern border. The seasonal drainage runs through the ponderosa-juniper community but there is no real distinct riparian community that is evident along this ephemeral stream channel. The mountain mahogany stands are quite dense in parts of this community, forming almost a continuous canopy in places; mountain mahogany is important to a number of wildlife species, contributing to the species diversity of the site. As the ponderosa pine becomes more and more sparse in the northern half of the RNA the site transitions to western juniper/bitterbrush/fescue plant association, with widely spaced trees and a dense shrub understory.

In places where the juniper overstory is absent the community is classified as a big sagebrush-bitterbrush/bunchgrass plant association. This typical shrub steppe community is found on relatively deep and well developed soils and because of the bitterbrush component has important implications for wildlife, especially mule deer. Finally, at the lower elevations in the RNA on shallow, rocky soils low sagebrush is prominent. On slightly better sites there is Idaho fescue associated with the low sagebrush but in the sites with the shallowest soils Sandberg's bluegrass predominates. These low condition sites are usually referred to as bluegrass scablands but what they may lack in bunchgrasses they often make up for in herbaceous diversity.

Along the eastern boundary of the RNA, the West Fork Silver Creek contains a narrow riparian zone that is characterized as a mountain alder-Douglas spiraea association; ponderosa pine dominates much of the overstory of the canyon.

The canyon is about 100 feet (32 m.) deep and has steep rocky sideslopes which have restricted livestock access to much of the stream. There is a very narrow band of herbaceous riparian vegetation beside the stream that is dominated by sedges and forbs; species in this band include Carex aquatilis and Glyceria borealis. The streambed is 6-10 feet (2-3 m.) wide in the canyon and is capable of supporting resident salmonids. Inland redband trout have been reported from the Silver Creek drainage, however, it is not known if surveys have been conducted within the proposed RNA.

As elevational differences are slight at the RNA the natural communities present at Silver Lake Exclosure RNA are actually found more in a mosaic that along a strict gradient. The defining environmental characteristic for natural communities within the RNA is usually soil depth such that the low sagebrush sites can also be found as small inclusions within the ponderosa pine-juniper woodlands. However, at the northern boundary of the RNA, sagebrush steppe vegetation predominates.

Fauna

Faunal species have not been systematically studied or inventoried in Silver Lake Exclosure RNA. Observations of animal species noted during surveys conducted at the site as well as surveys on nearby areas are included below. The following terrestrial vertebrates are among those most likely to be encountered in the RNA (Burt and Grossenbieder 1976; National Geographic Society 1987; Nussbaum et al 1983, Summers 1994).

The RNA falls within critical deer winter range which is located at the interface of the sagebrush steppe and the ponderosa pine forest zone (USDA 1989b). Characteristic features of deer winter range are the well developed thermal cover provided by younger conifer trees and mountain mahogany shrubs and the presence of bitterbrush, a preferred and nutritious browse plant (Seyer 1981).

<u>Scientific name</u>	<u>Common name</u>
Anguidae	
<u>Elgaria coerulea</u>	Northern alligator lizard
Iguanidae	
<u>Phrynosoma douglasii</u>	Short-horned lizard
<u>Sceloporus occidentalis</u>	Western fence lizard
Colubridae	
<u>Contia tenuis</u>	Sharptail snake
<u>Thamnophis ordinoides</u>	Northwestern garter snake
<u>Thamnophis sirtalis</u>	Common garter snake
Bufo	
<u>Bufo boreas</u>	Western toad
Hylidae	
<u>Hyla regilla</u>	Pacific treefrog

Cathartidae	
<u>Cathartes aura</u> ✓	Turkey vulture
Accipitridae	
<u>Accipiter striatus</u> ✓	Sharp-shinned hawk
<u>Accipiter gentilis</u> ✓	Northern goshawk
<u>Buteo jamaicensis</u> ✓	Red-tailed hawk
<u>Buteo lagopus</u> ✓	rough-legged hawk
<u>Aquila chrysaetos</u> ✓	Golden eagle
Falconidae	
<u>Falco sparverius</u>	kestrel
<u>Falco mexicanus</u>	prairie falcon
Phasianidae	
<u>Centrocercus urophasianus</u>	sage grouse
Columbidae	
<u>Zenaida macroura</u>	Mourning dove
Strigidae	
<u>Bubo virginianus</u>	Great horned owl
<u>Glaucidium gnoma</u>	Northern pygmy owl
<u>Asio otus</u>	Long-eared owl
Caprimulgidae	
<u>Chordeiles minor</u>	Common nighthawk
Apodidae	
<u>Chaetura vauxi</u>	Vaux's swift
Trochilidae	
<u>Selasphorus rufus</u>	Rufous hummingbird
<u>Stellula calliope</u>	Calliope hummingbird
<u>Archilochus alexandri</u>	Black-chinned hummingbird
Picidae	
<u>Picoides pubescens</u>	Downy woodpecker
<u>Picoides villosus</u>	Hairy woodpecker
<u>Picoides albolarvatus</u>	White-headed woodpecker
<u>Colaptes auratus</u>	Northern flicker
<u>Sphyrapicus ruber</u>	Red-breasted sapsucker
Tyrannidae	
<u>Contopus borealis</u>	Olive-sided flycatcher
<u>Contopus sordidulus</u>	Western wood-pewee
<u>Empidonax oberholseri</u>	Dusky flycatcher
<u>Empidonax wrightii</u>	Gray flycatcher
Alaudidae	
<u>Eremophila alpestris</u>	Horned lark

Corvidae	
<u>Perisoreus canadensis</u>	Gray jay
<u>Cyanocitta stelleri</u>	Steller's jay
<u>Corvus corax</u>	Common raven
<u>Nucifraga columbiana</u>	Clark's nutcracker
<u>Pica pica</u>	Black-billed magpie
<u>Aphelocoma coerulescens</u>	Scrub jay
Paridae	
<u>Parus atricapillus</u>	Black-capped chickadee
<u>Parus gambeli</u>	Mountain chickadee
Aegithalidae	
<u>Psaltriparus minimus</u>	Bushtit
Sittidae	
<u>Sitta carolinensis</u>	White-breasted nuthatch
<u>Sitta canadensis</u>	Red-breasted nuthatch
<u>Sitta pygmaeus</u>	Pygmy nuthatch
Certhiidae	
<u>Certhia americana</u>	Brown creeper
Troglodytidae	
<u>Troglodytes aedon</u>	House wren
Sylviidae	
<u>Regulus calendula</u>	Ruby-crowned kinglet
<u>Regulus satrapa</u>	Golden-crowned kinglet
Muscicapidae	
<u>Sialia currucoides</u>	Mountain bluebird
<u>Catharus ustulatus</u>	Swainson's thrush
<u>Catharus guttatus</u>	Hermit thrush
<u>Myadestes townsendi</u>	Townsend's solitaire
<u>Turdus migratorius</u>	American robin
Laniidae	
<u>Lanius ludovicianus</u>	Loggerhead shrike
<u>Lanius excubitor</u>	Northern shrike
Mimidae	
<u>Oreoscoptes montanus</u>	Sage thrasher
Bombycillidae	
<u>Bombycilla cedrorum</u>	Cedar waxwing
Sturnidae	
<u>Sturnus vulgaris</u>	European starling
Vireonidae	
<u>Vireo solitarius</u>	Solitary vireo
<u>Vireo gilvus</u>	Warbling vireo

Emberizidae

<u>Vermivora celata</u>	Orange-crowned warbler
<u>Dendroica coronata</u>	Yellow-rumped warbler
<u>Oporonis agilis</u>	MacGillivray's warbler
<u>Wilsonia pusilla</u>	Wilson's warbler
<u>Piranga ludoviciana</u>	Western tanager
<u>Chlorura chlorura</u>	Green-tailed towhee
<u>Spizella passerina</u>	Chipping sparrow
<u>Poocetes gramineus</u>	Vesper sparrow
<u>Chondestes grammacus</u>	Lark sparrow
<u>Spizella breweri</u>	Brewer's sparrow
<u>Zonotrichia atricapilla</u>	Golden-crowned sparrow
<u>Zonotrichia leucophrys</u>	White-crowned sparrow
<u>Junco hyemalis</u>	Dark-eyed junco
<u>Euphagus cyanocephalus</u>	Brewer's blackbird
<u>Molothrus ater</u>	Brown-headed cowbird

Fringillidae

<u>Carpodacus cassinii</u>	Cassin's finch
<u>Loxia curvirostra</u>	Red crossbill
<u>Carduelis pinus</u>	Pine siskin
<u>Coccothraustes vespertinus</u>	Evening grosbeak

Soricidae

<u>Sorex vagrans</u>	Vagrant shrew
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Talpidae

<u>Scapanus orarius</u>	Pacific mole
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Verpertilionidae

<u>Myotis lucifugus</u>	Little brown myotis
<u>Myotis yumanensis</u>	Yuma myotis
<u>Myotis evotis</u>	Long-eared myotis
<u>Myotis volans</u>	Long-legged myotis
<u>Myotis californicus</u>	California myotis
<u>Anthrozous pallidus</u>	Pallid bat
<u>Lasionycteris noctivagrans</u>	Silver-haired bat
<u>Eptesicus fuscus</u>	Big brown bat
<u>Lasiurus cinereus</u>	Hoary bat
<u>Plecotus townsendii</u>	Townsend's big-eared bat

Leporidae

<u>Sylvilagus nuttalli</u>	Mountain cottontail
<u>Lepus americanus</u>	Snowshoe hare
<u>lepus californicus</u>	Blacktail jackrabbit

Sciuridae

<u>Eutamias townsendii</u>	Townsend's chipmunk
<u>Eutamias minimus</u>	Least chipmunk
<u>Eutamias amoenus</u>	Yellow-pine chipmunk
<u>Citellus lateralis</u>	Golden-mantled squirrel
<u>Tamiasciurus douglasii</u>	Douglas' squirrel

Geomyidae

<u>Thomomys mazama</u>	Mazama pocket gopher
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Cricetidae	
<u>Peromyscus maniculatus</u>	Deer mouse
<u>Neotoma cinerea</u>	Bushy-tailed woodrat
<u>Lagurus curtatus</u>	Sagebrush vole
Erethizontidae	
<u>Erethizon dorsatum</u>	Porcupine
Canidae	
<u>Canis latrans</u>	Coyote
Ursidae	
<u>Ursus americanus</u>	Black bear
Mustelidae	
<u>Martes americana</u>	Marten
<u>Mustela frenata</u>	Long-tailed weasel
<u>Spilogale gracilis</u>	Western spotted skunk
<u>Mephitis mephitis</u>	Striped skunk
<u>Taxidea taxus</u>	Badger
Felidae	
<u>Felis rufus</u>	Bobcat
<u>Felix concolor</u>	Mountain lion
Cervidae	
<u>Odocoileus hemionus</u>	Mule deer
<u>Cervus canadensis</u>	Elk

Aquatic

Aquatic habitat types are represented within Silver Lake Exclosure RNA in the ephemeral drainage that runs from the southwest to the northeast through the RNA and in the half mile stretch of West Fork Silver Creek located on the eastern edge of the RNA. The ephemeral drainage appears to carry water only after storm events and for a short time during the spring runoff; there is no distinct riparian zone present and there are only occasional occurrences of the plant species usually associated with riparian areas. There is no woody vegetation such as willows (Salix sp.) present in the intermittent drainage and there is no zone or band of sedges and rushes present there as well. The West Fork Silver Creek is a perennial stream that is capable of sustaining resident salmonid species as well other smaller species of fish in deeper pools. The streambed is mostly composed of boulders with a few small pools and riffle systems present in the RNA. There is adequate riparian vegetation to provide shade along Silver Creek for trout habitat and the vegetation also provides habitat for insects which are food sources for the fish. The aquatic habitat types have not been classified at the RNA and the aquatic zone, in general, has not been sampled for aquatic species present. It is suspected that amphibians would find suitable habitats along the West Fork Silver Creek. Redband trout (Oncorhynchus mykiss ssp.) have been reported from Silver Creek but it is not known if these fish have been found within the bounds of the RNA.

Geology

Geology of Silver Lake Exclosure RNA has not been described in detail and texts of Oregon geology do not address the area except in the most general terms (Baldwin 1964). The underlying bedrock consists of basalt and tuffs that seem to have resulted from flows that may date back to the Miocene, around 20 million years ago, or may have a more recent origin in the Pleistocene making them around 2-3 million years old. Overlying the decomposing bedrock is a layer of Mt. Mazama ash that is variable in thickness but can accumulate some depth in localized deposits. The ash plume from the Mt. Mazama explosion (6800 years ago) travelled in a generally northeast direction so the RNA, being due east of the site, received only the edge of the pumice ash deposits.

The Basin & Range country which is immediately adjacent to the East Cascades Province and the RNA is also underlain with basalt flows that date back to the late Miocene period. It has been reported from some sites in the Great Basin that there are sedimentary formations which lie on top of the basalt flows adding further heterogeneity to the geology of the region.

The RNA itself is located on level to gently sloping terrain with the only discernible feature on the landscape being the two drainages which cross the area. The intermittent drainage occupies a shallow ravine that has side slopes with less than 40% slopes. There is some exposed rock within the drainage but soils tend to be deeper within the drainage than in areas outside it. The canyon which contains the West Fork of Silver Creek is deeper than the intermittent drainage and has side slopes that approach 70% slopes.

Soils

The soils in the Silver Lake Exclosure RNA are generally characterized as being relatively shallow, gravelly residual soils on slopes of less than 15%. Most of these soils can support some degree of coniferous tree growth but are less than ideal in terms of commercial productivity. Some sites on the RNA have extremely shallow rocky soils that limits vegetation growth to low sagebrush community types. Soils in the drainages which cross the RNA contain small pockets of alluvium amongst the rocky residual soils. The Fremont Forest Soil Resource Inventory (1979) shows six soil mapping units present within the boundary of the RNA (Map 5). Mapping units are analogous to soil types with special reference being made to the landforms on which they are found as well as to the vegetation present on them. The soil mapping units are described below.

Mapping Unit 1: Steep and narrow canyon lands which are dominated by steep slopes, talus, and bedrock outcrops. Soils are very shallow to moderately deep on sideslopes. Alluvial stringer soils along drainageways are deep, however. Vegetation is varied with western juniper, mountain mahogany, big sagebrush, and low sagebrush being prominent. Slopes range from 30 to 80 percent. This mapping unit is restricted to the two drainages in the RNA.

Mapping Unit 28: Gently sloping tablelands and scabland flats with very shallow loamy residual soils derived from tuffs and basalt. Surface and subsurface soils are very thin and moderately coarse textured. The lower subsoil is commonly silica cemented and the soils show very slow permeability. Depth to bedrock averages 14 inches (36 cm). The mapping unit typically contains low sagebrush vegetation. Less than 10 acres of the RNA contain soil mapping unit 28.

Mapping Unit 30A: Moderately shallow loamy residual soils derived from ash-flow tuffs and localized basalt. Surface and sub-surface soils are of medium thickness, about 18 inches (46 cm) in depth and fine to medium textured. The lower subsoil is commonly silica cemented. Depth to bedrock varies from 10 to 25 inches (25-64 cm). Soil fertility is low, supporting sparse juniper and mountain mahogany. The mapping unit commonly is found on gently rolling plateaus but occurs within the RNA only on the eastern rim of the West Fork Silver Creek canyon.

Mapping Unit 53: Shallow to very shallow loamy residual soils derived from ash-flow tuffs. Surface and subsurface soils are very thin and medium to moderately coarse textured. The lower subsoil may contain a thin, silica cemented hardpan. Bedrock is soft, massive yellowish brown ash-flow tuff. Depth to bedrock is 20 inches (51 cm). Mapping unit 53 generally supports low sagebrush and big sagebrush community types within the RNA and is located on the northern portion of the site.

Mapping Unit 56A: Shallow to moderately deep residual soils derived from ash-flow tuffs and some localized basalt and rhyolite. Surface soils are thin and medium to moderately coarse textured while subsoils are thin to moderately thick and moderately fine to medium textured. Bedrock is mostly brown or yellowish brown tuff and breccia. Depth to bedrock ranges from 18 to 34 inches (46-86 cm). This mapping unit typically has western juniper, mountain mahogany, and bitterbrush community types associated with it.

Mapping Unit 64: Moderately deep to deep gravelly residual soils typically derived from ash-flow tuffs, diatomite, and lacustrine siltstone and sandstone. Surface soils are generally thin and medium to moderately coarse textured. Subsoils are moderately thick and moderately fine to moderately coarse textured. Depth to bedrock ranges from 25-45 inches (64-114 cm). This mapping unit supports ponderosa pine, bitterbrush, and mountain mahogany community types.

Lands

Silver Lake Exlosure RNA is bordered on the south, west, and east by lands which are managed by the Fremont National Forest and on the north by lands managed by the BLM. Lands to the south and east of the RNA are classified as Management Area 1 in the Fremont Forest Plan (1989a) and are managed for mule deer habitat with an emphasis on maintaining critical components of deer winter range. Limited amounts of timber harvest may occur in Management Area 1 and livestock grazing is permitted so long as the goals for big game habitat are not compromised.

Lands to the west of the RNA fall within Management Area 6A which follows Forest Road 27. Management Area 6A directs attention to viewsheds along visually sensitive travel routes through the National Forest. Management along this corridor will not typically restrict traditional Forest activities but there may be some modifications such activities in order to preserve scenic values present. Lands to the north which are managed by the BLM are within grazing allotments which are dedicated to livestock grazing.

A small portion of BLM land is included within the deer fencing that encloses the central portion of the RNA. Another larger parcel of adjacent BLM lands is to be fenced to exclude livestock and to be managed by the U.S. Forest Service in conjunction with the RNA. These fenced lands, however, do not currently have a Research Natural Area designation. A Memorandum of Understanding is being developed between the Forest Service (Fremont National Forest) and the BLM (Lakeview District) regarding the management of these fenced BLM lands adjacent to the RNA.

Cultural

There are no known cultural resources located within the Silver Lake Exclosure RNA but obsidian flakes have been found there by casual observers. A complete cultural resources inventory has not been conducted in the RNA.

IMPACTS AND POSSIBLE CONFLICTS

Grazing Resources

Silver Lake Exclosure RNA is surrounded by the Hager Pasture of the Foster Butte grazing allotment on the Silver Lake Ranger District of the Fremont National Forest. The pasture is grazed under a rest-rotation management plan with cattle numbers for 1993 being 356 Animal Units between May 15 and July 5. Grazing has been light in the area since 1983 with the management emphasis being to keep the cattle to the east of Silver Creek. The RNA has not been included in a scheduled grazing program since the deer and livestock exclosure fence was established in the early 1960's but trespass grazing has occurred sporadically. Establishment of the RNA will not impact grazing resources as the area had been previously withdrawn from grazing due to the exclosure fencing. The fencing will need to be maintained in order to protect the values present in the RNA.

There is currently a proposed project which will affect grazing lands to the south and east of the RNA. The project is called the C/B Planning Area Resource Management Activities (Environmental Assessment #91106, Silver Lake Ranger District, Fremont National Forest, signed 8/11/94). The project calls for a number of activities including underburning, timber harvest, and shrub restoration in the project area but no activities are scheduled for the RNA.

Grazing also occurs on the adjacent BLM lands managed by the Lakeview BLM District.

Mineral Resources

There are no reported hardrock mining claims in Silver Lake Enclosure RNA. Mineral resources are not usually associated with lands such as those found within the RNA. The RNA will be proposed for withdrawal of mineral entry upon formal establishment.

Timber

The RNA borders Fremont National Forest lands whose secondary goal is to produce timber while maintaining mule deer winter range and other forest resources (USDA Forest Service 1989b). Designation and establishment of the RNA will remove the site from potential timber harvest.

Approximately half of the RNA is forested to some extent but the density of trees is quite low and, except for a few notable exceptions, most of the trees are less than 18 inches (46 cm) in diameter. While scheduled timber harvest will not occur on the RNA there is a potential for impact to the RNA when timber is cut adjacent to the RNA. Timber harvests adjacent to the RNA may result in invasions of exotic plant and animal species as well as may result in blowdown in the natural area. Timber trespass in the form of firewood cutting is also possible in the RNA as adjacent harvest areas often allow for greater access to the area.

Surrounding lands have had timber harvests over the years to the extent that the old growth ponderosa pine is now reduced to approximately one-sixth its historical range in the area (C/B Planning Area Environmental Assessment, Silver Lake Ranger District 1994) . Fire suppression has also played a role in the decrease of old growth pine and the resulting increase in understory species such as white fir (Abies concolor) and dense thickets of ponderosa pine saplings and stands where mistletoe has decreased pine vigor.

Watershed Values

There are significant watershed values present at Silver Lake Enclosure RNA in the West Fork of Silver Creek. The West Fork of Silver Creek is a major watershed in the area, carrying a significant volume of water year round. The creek is the primary source of water for Silver Lake, a playa lake, which during wet years provides habitat for migratory waterfowl. In recent decades, diversions from Silver Creek have caused Silver Lake to dry up early in the season. The lakebed is grazed by livestock and some portions of it produce pasture hay. The West Fork of Silver Creek has native trout present in the form of inland redband trout, a species which is considered to be a declining species in the West. Designation and establishment of the RNA will aid in protecting the watershed values that are present in the stretch of West Fork Silver Creek within the RNA.

Recreation Values

Silver Lake Enclosure RNA receives limited recreation use, primarily in the fall from hunters.

Casual recreation use has not seriously impacted the RNA to date, however, use could increase fire danger in the area. Recreational use and identification of the site as an RNA on general forest recreation maps should be discouraged.

Wildlife and Plant Values

There have been no listed threatened or endangered wildlife species located within the RNA to date. A draft establishment record for Silver Lake Exclosure RNA which dates back to the 1980's listed the three-color monkeyflower (Mimulus tricolor), a Forest Service Sensitive Species, as being present at the site. Surveys have not found this species at the RNA and there is no record of the occurrence listed with the Oregon Natural Heritage Program.

Special Management Area Values

There are no congressionally designated, special management areas present within the RNA or adjacent to the site such that establishment of the RNA will not affect any of these types of areas.

Adjacent Private Lands

There are no private lands adjacent to the RNA.

MANAGEMENT PRESCRIPTION

Management and protection of Silver Lake Exclosure RNA will be directed towards maintaining natural ecological processes. Activities of humans that disturb or modify ecological processes will be discouraged.

Silver Lake Exclosure RNA is included, along with other RNAs, in the Fremont National Forest Plan in Management Area 8, Research Natural Areas (USDA Forest Service 1989b). Standards and guidelines for management are noted in the Forest Plan for the Management Area.

Vegetation Management

Standards and guidelines for RNAs, Management Area 8, address vegetation management under several different headings (USDA Forest Service 1989b). The overall management direction for all RNAs is to preserve the naturally occurring physical and biological processes at the site.

Wildfire will be actively suppressed unless plans approved by the Director of the Pacific Northwest Research Station provide for letting natural fires burn. Fire suppression will use methods and equipment that will minimize disturbance to the special features of the area (USDA Forest Service 1989b). Prescribed burning will be used only as specified in approved research projects or when needed to meet RNA management goals.

The Forest Plan specifies that natural ecological processes such as insect and disease outbreaks shall not be suppressed within the RNA. However, the Plan also specifies that the RNA will be protected from fire, insect, disease, and animal damage primarily by management practices outside the area such as underburning, thinning, etc. (USDA Forest Service 1989b). Monitoring of the RNA is recommended in order to track any outbreaks that may occur.

Introduced species and weedy native species are also a concern at the RNA. At this time cheatgrass (Bromus tectorum) is the only known significant weed infestation in the RNA, occurring near the northwest corner of the site as well as scattered throughout the big sagebrush community. Monitoring in the form of annual surveys of the RNA should be conducted to detect weedy invasions and to track the spread of cheatgrass into other natural communities in the natural area.

Transportation Plan

No roads or trails are planned for this area.

Fences and Protective Barriers

One of the principal features of the Silver Lake Exclosure RNA is the deer fencing which encircles the natural area. The fencing dates back to the 1960's when it was put in place to compare bitterbrush utilization between livestock and deer. The fencing at the RNA has recently been restored by a cooperative venture between the Forest Service and Oregon Department of Fish & Wildlife (ODFW). Additional livestock fencing is to be placed along the perimeter of the RNA which lies outside of the older exclosure fencing on some sides of the protected area.

The forest-sagebrush steppe transition zone in the Silver Lake area is critical winter range for the large deer herds present. Deer browse the new growth on shrubs which has the effect of limiting seed set, especially on bitterbrush. Local wildlife biologists with ODFW have attempted bitterbrush seedlings and plantings in the region for a number years with poor success. It is now believed that genetically adapted seed sources are needed to enhance these efforts. Biologists are interested in establishing an area where bitterbrush seed can be collected in quantity without interference from competing deer and livestock grazing and the RNA is being considered as a site for this activity. Seed collection or other research activities planned for the RNA will be coordinated by the Fremont National Forest and the Pacific Northwest Research Station Director.

Signs on the RNA boundaries along Forest roads may be needed to alert the public of the presence of the natural area.

ADMINISTRATION RECORDS AND PROTECTION

Administration and protection of Silver Lake Exclosure RNA will be the responsibility of the Fremont National Forest. The District Ranger, Silver Lake Ranger District, has direct responsibility.

The Lakeview District of the BLM will be kept apprised of activities on the portions of BLM adjacent to the RNA which are to be managed by the U.S. Forest Service under the Memorandum of Understanding noted previously.

The Director of the Pacific Northwest Research Station will be responsible for any studies or research conducted in the area, and requests to conduct research in the RNA should be referred to that office. The RNA Scientist in the Research Station is designated as the lead contact person for all such requests. The Director will evaluate research proposals and coordinate all studies and research in the area with the District Ranger. All plant and animal specimens collected in the course of research conducted in the area will be properly preserved and maintained within university or federal agency herbaria and museums, approved by the Pacific Northwest Research Station.

Records for the Silver Lake Exclosure RNA will be maintained in the following offices:

Forest Supervisor, Fremont National Forest, Lakeview, Oregon
District Ranger, Silver Lake Ranger District, Silver Lake, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon
Forest Sciences Laboratory, Oregon State University, Corvallis, Oregon

Archiving

The Portland office of the Pacific Northwest Research Station will be responsible for maintaining the Silver Lake Exclosure RNA research data file and list of herbarium and species samples collected. The Forest Sciences Lab in Corvallis, Oregon is establishing a data base for maintaining research data and lists of species for all RNAs in the region. Computerized files for the RNA will be maintained at the Forest Sciences Lab.

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SILVER LAKE ENCLOSURE
RESEARCH NATURAL AREA
(CHASE SPRING ADMINISTRATIVE STUDY PLOT)

The property described herein lies within section 18, T. 29 S., R. 14 E., Willamette Meridian, in Lake County, State of Oregon, and is divided into three segments; Segment One is enclosed by a fence, eight feet in height, Segment Two is located within the enclosure but is on land administered by the Bureau of Land Management, and Segment Three is land adjoining Segment One. The bearings and distance in this description were derived from a GPS (Global Positioning System) survey. The GPS equipment used has a differentially corrected accuracy of +/- 5 meters (16.40 feet), but has a proved accuracy of 1 meter (3.2808 feet) or less. The distances on this drawing are shown to the nearest hundredth of a foot for description purposes but have accuracies to +/- 2 feet. The bearings in this description are shown to the nearest second but have an accuracy of +/- 5 minutes.

SEGMENT ONE:

From the 1/4 section corner between section 13, T. 29 S., R. 13 E., W. M. and section 18, T. 29 S., R. 14 E., W. M., which is an aluminum post 2 1/2 inch diameter with an aluminum cap, 3 1/4 inch diameter properly stamped and recorded, thence N. 85°12'39" E., 2261.26 feet to the northerly corner of the enclosure which is the corner of an eight foot fence and true Point of Beginning;

- 1 thence S. 64°06'37" E. 432.37 feet along the enclosure fence,
- 2 thence S. 63°12'00" E. 722.52 feet along the enclosure fence,
- 3 thence S. 60°31'00" E. 938.43 feet along the enclosure fence,
- 4 thence S. 59°58'48" E. 483.37 feet along the enclosure fence,
- 5 thence S. 25°35'40" W. 865.49 feet along the enclosure fence,
- 6 thence S. 14°45'17" W. 256.65 feet along the enclosure fence,
- 7 thence S. 07°28'49" E. 349.46 feet along the enclosure fence,
- 8 thence S. 31°14'56" W. 465.92 feet along the enclosure fence,
- 9 thence S. 48°05'18" W. 430.13 feet along the enclosure fence,
- 10 thence S. 55°17'30" W. 458.72 feet along the enclosure fence,
- 11 thence S. 75°30'52" W. 325.00 feet along the enclosure fence,
- 12 thence S. 82°03'23" W. 322.78 feet along the enclosure fence,
- 13 thence N. 02°30'23" E. 390.35 feet along the enclosure fence,
- 14 thence N. 30°59'37" W. 151.16 feet along the enclosure fence,
- 15 thence N. 62°50'25" W. 711.18 feet along the enclosure fence,
- 16 thence N. 59°34'00" W. 1093.88 feet along the enclosure fence,
- 17

17 thence N. $28^{\circ}37'29''$ E. 537.00 feet along the enclosure fence,
18 thence N. $31^{\circ}37'59''$ E. 498.00 feet along the enclosure fence,
19 thence N. $30^{\circ}12'24''$ E. 831.79 feet along the enclosure fence,
20 thence N. $30^{\circ}21'44''$ E. 537.38 feet along the enclosure fence,
21 thence N. $33^{\circ}40'10''$ E. 226.84 feet along the enclosure fence,
1

to the True Point of Beginning. The described parcel contains 173.25 acres, (contains 1.12 Acres described in Segment Two).

SEGMENT TWO:

A parcel of land within the enclosure as hereafter described is on lands administered by the Bureau of Land Management. Beginning at the True Point of Beginning heretofore described,

1 thence S. $64^{\circ}06'37''$ E. 432.37 feet, along the enclosure fence
2 thence Westerly to the intersection of the enclosure fence,
22 thence N. $33^{\circ}40'10''$ E. 226.84 feet along the enclosure fence,
1 to the True Point of Beginning, containing approximately 1.12 acres

SEGMENT THREE:

Beginning at position 5, which is on the enclosure fence described in segment One:

5 thence S. $56^{\circ}03'37''$ E., 801.39 feet to a point,
23 thence N. $70^{\circ}21'11''$ E., 291.32 feet to a point,
24 thence S. $28^{\circ}18'36''$ E., 96.42 feet to a point,
25 thence S. $51^{\circ}51'12''$ E., 116.29 feet to a point,
26 thence S. $16^{\circ}42'19''$ E., 204.53 feet to a point,
27 thence S. $15^{\circ}50'03''$ W., 1316.77 feet to a point,
28 thence S. $14^{\circ}02'29''$ E., 188.47 feet to a point,
29 thence S. $29^{\circ}08'37''$ W., 456.06 feet to a point,
30 thence S. $13^{\circ}27'13''$ W., 308.85 feet to a point,
31 thence S. $61^{\circ}23'56''$ W., 163.69 feet to a point,
32 thence S. $87^{\circ}50'23''$ W., 346.47 feet to a point,
33 thence N. $4^{\circ}45'56''$ W., 78.63 feet to a point,
34 thence N. $48^{\circ}01'25''$ W., 175.74 feet to a point,
35

35 thence N. $77^{\circ}54'35''$ W., 374.12 feet to a point,
 36 thence S. $78^{\circ}41'39''$ W., 199.85 feet to a point,
 37 thence N. $85^{\circ}08'15''$ W., 308.13 feet to a point,
 38 thence N. $70^{\circ}49'42''$ W., 216.41 feet to a point,
 39 thence N. $28^{\circ}59'25''$ W., 329.35 feet
 11 which is on the enclosure fence as described in Segment One,
 10 thence N. $55^{\circ}17'30''$ E., 458.72 feet along the enclosure fence,
 9 thence N. $48^{\circ}05'18''$ E., 430.13 feet along the enclosure fence,
 8 thence N. $31^{\circ}1'4'56''$ E., 465.92 feet along the enclosure fence,
 7 thence N. $7^{\circ}28'49''$ W., 349.46 feet along the enclosure fence,
 6 thence $14^{\circ}45'17''$ E., 256.65 feet along the enclosure fence,
 5 thence N. $25^{\circ}35'40''$ E., 865.49 feet along the enclosure fence,
 to the point of beginning of this segment. Containing 88.89 acres

Summary of Acreages:

Segment One: National Forest System Lands	172.13 Acres
Segment Two: Bureau of Land management	1.12 Acres
Segment Three: National Forest System Lands	<u>88.89 Acres</u>
Total	262.14 Acres

Peter A. Olson

Peter A. Olson
 Forest Land Surveyor
 December 4, 1995

DECISION NOTICE/DESIGNATION ORDER
AND
FINDING OF NO SIGNIFICANT IMPACT

SILVER LAKE EXCLOSURE RESEARCH NATURAL AREA

FREMONT NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN
AMENDMENT NO. RF #3

USDA-Forest Service
Silver Lake Ranger District
Fremont National Forest
Lake County, Oregon

INTRODUCTION

The Regional Forester recommended the establishment of this RNA in 1989 as stated in the Record of Decision for the Fremont National Forest Land and Resource Management Plan (Forest Plan). That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. Results of the Regional Forester's analysis are documented in the Forest Plan (Chapter IV, pages 95-96) and Final Environmental Impact Statement (Chapter IV, pages 171-172), which are available to the public upon request.

The Regional Forester has re-examined the Silver Lake Exclosure candidate RNA to ensure the environmental effects of establishing it as an RNA have not changed since 1989. This analysis is summarized in the attached Environmental Assessment.

SCOPING AND ISSUES

Scoping for this analysis began with a request for public comment on May 5, 1995. This included description of a specific proposed action and was sent to 257 individuals or organizations on both the Silver Lake Ranger District and the Supervisors Office, Fremont National Forest mailing lists. All comments were considered in making the decision.

As a result of the overall scoping, as well as Interdisciplinary Team (IDT) input, there were no issues identified as significant.

DECISION

Based on the analysis, it is my decision to adopt Alternative A. By virtue of the authority delegated to me by the Chief of the Forest Service in Forest Service Manual Section 4063, I hereby establish the Silver Lake Exclosure Research Natural Area (RNA). It shall be comprised of approximately 262 acres of land in Lake County, Oregon, on the Silver Lake Ranger District of the Fremont National Forest, as described in the section of the Establishment Record entitled "Location" (see attached maps).

Alternative A is selected because it provides long-term protection and recognition of a Forest cell type not currently adequately represented in the

RNA system. The Silver Lake Exclosure RNA will be managed in compliance with all relevant laws, regulations, and Forest Service Manual direction regarding RNA's, and in accordance with the management direction identified in the Forest Plan Chapter IV pages 95 and 96.

The Fremont Forest Plan is hereby amended to change the allocation of the Silver Lake Exclosure from "proposed" to "established" RNA. This action is consistent with the long-term resource management goals and objectives of the Forest Plan {36 CFR 219.10(f)}. This will be a non-significant amendment to the Forest Plan (36 CFR 219).

ALTERNATIVES

The alternatives considered were: Alternative B, the "No Action" alternative, which would continue management of the Silver Lake Exclosure as a "proposed" RNA. This alternative was not selected because it would only provide short-term protection of the Silver Lake Exclosure area until the Forest Plan is amended or revised. Alternative C was also not selected due to the fact that it would remove the proposed status of this RNA and return the area back to deer winter range (MA #1) and visual management (MA#6). This alternative would not protect the area as an RNA and would not protect the Forest cell type that is currently not represented on the Forest.

FINDING OF NO SIGNIFICANT IMPACT

Based on the environmental analysis summarized in the environmental assessment, it has been determined that the proposed action is not a major Federal action that would significantly affect the quality of the human environment. Therefore, an environmental impact statement is not needed. This determination is based on the following factors (40 CFR 1508.27):

Context

Although this is an addition to the National system of RNA's, both short-term and long-term physical and biological effects are limited to the local area.

Intensity

1. There are no known effects on public health and safety.
2. There are no known effects on historic or cultural resources, actual or eligible National Register of Historic Places sites, park lands, prime farmlands, wetlands, or wild and scenic rivers. No significant adverse effects are anticipated to any environmentally sensitive or critical area.
3. Effects on the human environment are uncertain, do not involve unique or unknown risks, and are not likely to be highly controversial.
4. The action is not likely to establish a precedent for future actions with significant effects.
5. No significant direct, indirect or cumulative impacts to the natural resources or other components of the human environment are anticipated.

6. The proposed action will not adversely affect any federally listed or proposed endangered or threatened species or Regionally sensitive species of plants or animals or their critical habitat.

7. The proposed action is consistent with Federal, State and local laws and requirements for the protection of the environment.

8. The proposed action would have no adverse or irreversible environmental effects. Irretrievable effects resulting from the loss or reduction of resource outputs are expected to be insignificant.

This decision is in accordance with the National Environmental Policy Act (1969), the National Forest Management Act (1976), and all other applicable laws and regulations.

IMPLEMENTATION

Implementation of this decision shall not occur within 7 days following publication of the legal notice of the decision in The Oregonian.

APPEAL OPPORTUNITIES

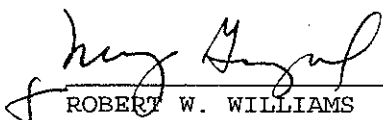
Legal notice of this decision will appear in The Oregonian. The Forest Supervisor of the Fremont National Forest will notify the public of this decision and mail a copy of the Decision Notice\Designation Order to all persons interested in or affected by the decision. This decision is subject to appeal pursuant to 36 CFR Part 217. A copy of the Notice of Appeal must be in writing and submitted to:

Chief, USDA Forest Service
ATTN: NFS APPEALS
14th and Independence Avenue, S.W.
P.O. Box 96090
Washington, D.C. 20090-6090

Any written Notice of Appeal of this decision must be fully consistent with 36 CFR Part 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal and be submitted within 45 days from the date of legal notice of this decision in The Oregonian.

Contact Person

For further information regarding this decision or the Silver Lake Exlosure RNA Environmental Assessment contact: James Rosetti, Fremont National Forest, 524 North G Street, Lakeview, Oregon 97630, Phone 541-947-6234.


ROBERT W. WILLIAMS

Regional Forester
Pacific Northwest Region

April 16, 1996

Date

Public Notices

8

ANNOUNCEMENT OF CALL FOR BIDS FOR BUILDING 7 REROOFING PROJECT
Chemeketa Community College requests sealed bids from qualified contractors for the **Building 7 Reroofing Project** located at 4000 Lancaster Drive NE, Salem, Oregon as described in the drawings and specifications attached to the Chemeketa Community College Purchasing Building 22, Lancaster Drive NE, Salem, OR 97307.

Public Notices

BOARD OF DIRECTORS
The Ridgefield Board of Directors will meet on April 22, 1996 at 7:00 PM in the Ridgefield District Office, 1000 Ridgefield Drive, Ridgefield, Oregon 97137.

NOTICE OF DECISION

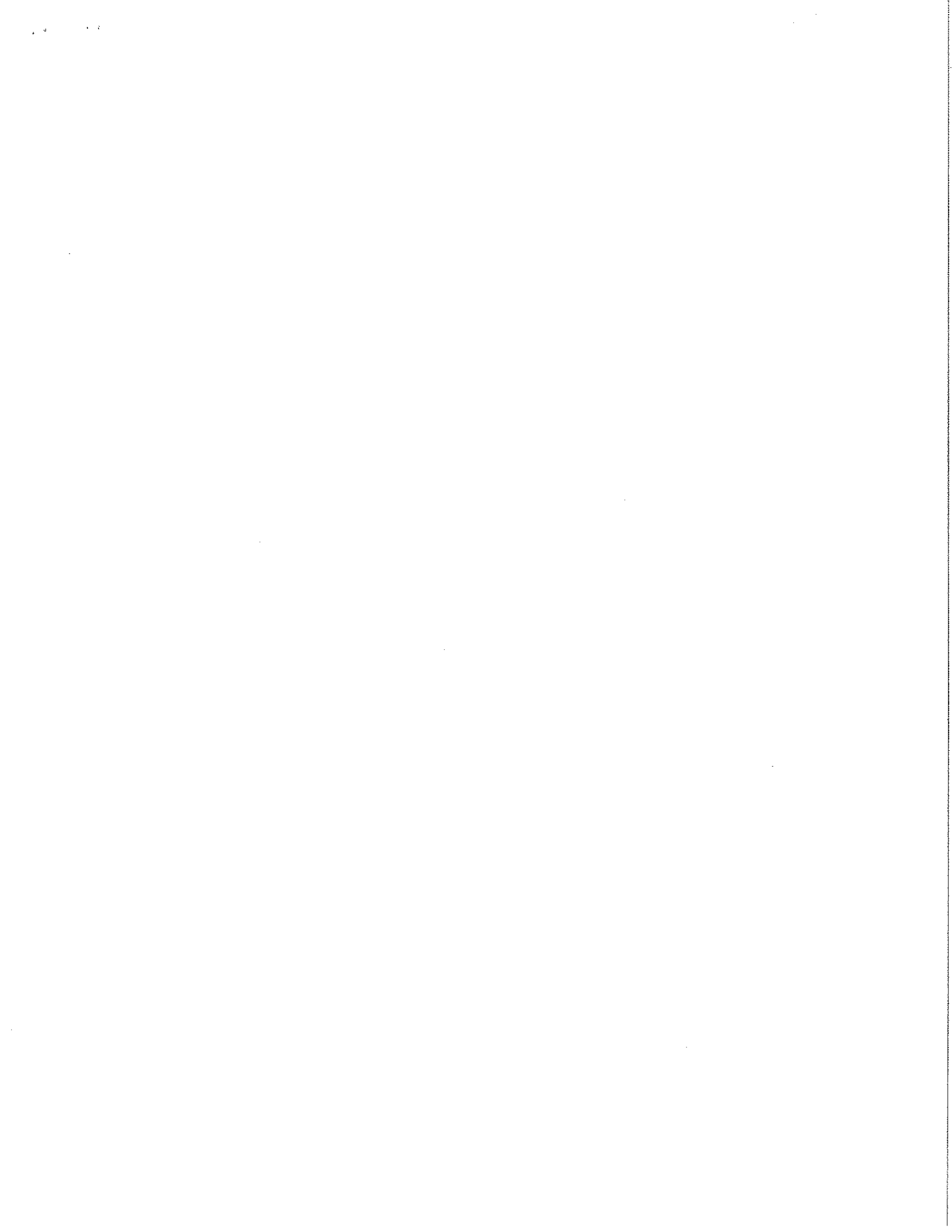
On April 16, 1996, USDA - Forest Service, Pacific Northwest Regional Forester made a decision to establish the 262 acre **Silver Lake Exclosure Research Natural Area** on the Silver Lake Ranger District of the Fremont National Forest in Lake County, Oregon. This decision will be implemented after April 26, 1996.

A copy of the Decision Notice/Designation Order and Finding of No Significant Impact is available upon request from the Regional Officer, Environmental Coordination, P.O. Box 3623, Portland, Oregon 97208.

This decision is subject to appeal pursuant to Forest Service regulation 36 Code of Federal Regulation (CFR) Part 217. Any written Notice of Appeal must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal. Any written appeal must be postmarked or received by the Appeal Deciding Officer, Chief Jack Ward Thomas, USDA - Forest Service, ATTN: NFS Appeals, P.O. Box 96090, Washington, D.C. 20090-6090 within 45 days of the date of this legal notice.

For further information regarding Silver Lake Exclosure Research Natural Area, contact Jame Rosetti, Fremont National Forest, 524 North G Street, Lakeview, Oregon 97630, phone 541-947-6234.

THE OREGONIAN 'Classifieds'
Call 221-8000 to place your ad!



ENVIRONMENTAL ASSESSMENT
SILVER LAKE EXCLOSURE
RESEARCH NATURAL AREA ESTABLISHMENT

Silver Lake Ranger District
Fremont National Forest
Lake County, Oregon

PROPOSED ACTION

The Fremont National Forest proposes to establish approximately 262 acres as the Silver Lake Exclosure Research Natural Area (RNA) and to manage it according to direction provided for in Management Area #8, in the Fremont National Forest Land and Resource Management Plan (Forest Plan). As the Forest Plan currently lists the Silver Lake Exclosure RNA as a candidate for establishment, formal designation of the RNA as an established RNA, by the Regional Forester, will amend the Forest Plan. The proposed action will also finalize the boundary of the RNA.

PURPOSE AND NEED FOR ACTION

The purpose of establishing the Silver Lake Exclosure is to contribute to a series of RNA's designated to "...illustrate adequately or typify for research or educational purposes the important Forest and range types in each Forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance" (36 CFR 251.23). The Silver Lake Exclosure RNA contributes to a series of RNA's by providing an example of an unfilled RNA cell need for a Western juniper/big sage/Idaho fescue community type, but also includes Ponderosa pine-western juniper/bitterbrush/Idaho fescue community as discussed in the Forest Plan, Chapter IV page 127. Establishment of this RNA provides long-term protection and recognition of this cell type.

Designation of the Silver Lake Exclosure RNA is consistent with the Forest Plan, which directs that an establishment record shall be developed for each potential RNA area. The Silver Lake Exclosure RNA was identified in the Forest Plan as a proposed RNA, based on the represented unfilled cell need it provides. This is based on the relatively undisturbed conditions of these cell types in the area at this time. Comments received from agency specialists and from interested and affected members of the public support the establishment of an RNA in the area. Site conditions and public concerns have been reviewed during this analysis and no important changes have occurred. Conditions and environmental effects of designation are much the same as described in Chapter IV page 165 of the Forest Plan. An alternate RNA site for protection of this cell type was considered during Forest Plan development but the Silver Lake Exclosure was determined to provide the most appropriate site for inclusion in the national network for protection of this cell type.

DESCRIPTION

The environmental analysis evaluates the proposal to amend the Fremont National Forest Land and Resource Management Plan of 1989 (Forest Plan) and change the proposed Silver Lake Exclosure RNA on the Silver Lake Ranger District, to an established RNA. This assessment will document the analysis of the Proposed Action and two alternatives.

MANAGEMENT STATUS

The Forest Plan currently lists Silver Lake Exclosure as a proposed RNA. The approximate 262 acre site is designated as Management Area (MA)#8, Research Natural Areas. Management for this MA provides for the preservation of undisturbed Forest and rangeland ecosystems for scientific and educational purposes. These lands will be managed to preserve or restore natural processes, features, and biological communities.

CURRENT CONDITION

The Silver Lake Exclosure RNA Establishment Record (1994) describes the current condition of the RNA in detail. The Silver Lake Exclosure area is part of a narrow transition zone between the upland forests of the east Cascades physiographic province and the basin and range province lying to the north and east. The area includes the following RNA cell needs (or elements) on the east slope Oregon Cascades physiographic province:

- 1) Western juniper/big sagebrush/Idaho fescue community: This community forms a broad band of vegetation north of where ponderosa pine first becomes present within the natural area. Portions of the area have very low overall densities of western juniper such that they are essentially sagebrush/bitterbrush grasslands.
- 6) Ponderosa pine-western juniper/bitterbrush/Idaho fescue community (From the Oregon Natural Heritage Advisory Council, 1993). This community is found on relatively deep and well developed soils and due to the bitterbrush component, has important implications for wildlife, especially mule deer.

As elevational differences are slight at the RNA, the natural communities present at the RNA are found more in a mosaic than a strict gradient. The defining environmental characteristic for natural communities within the RNA is usually soil depth. However, at the northern boundary of the RNA, decreasing precipitation becomes an overriding factor and sagebrush steppe vegetation predominates.

The timbered sites exhibit a variety of stand conditions that include mistletoe infestations and bark beetle attacks.

The Silver Lake Exclosure RNA has four natural communities or plant associations represented within its boundaries. Additional information can be found in the attached establishment record prepared by the Nature Conservancy (1994).

ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

Alternative A, Proposed Action

The proposed action is to establish the approximate 262 acre Silver Lake Exclosure Research Natural Area. Acreage figures include approximately 172 acres that has an 8 foot exclosure fence (excluding both deer and cattle) and approximately 90 acres (the fence line may vary when placed due to rocky soil conditions) that will be bound by a 4 strand cattle exclosure fence (excluding deer only). Research to be completed from both excluded areas will make a comparison of bit~~ter~~brush utilization between deer and cattle usage which will maintain a natural condition within the exclosure for scientific study. These studies will give managers detailed information on certain ecosystems for better management. The area outside the exclusion fences is presently Management Areas #1 and 6A, which emphasizes deer winter range and visual quality.

This would provide long-term protection of the area. Management would follow direction provided in the Forest Plan. Specifically, a management and monitoring plan will be developed. Management of the area requires protection against inappropriate encroachment.

Dispersed recreation would be allowed to the extent that it does not reduce the research or education values of the area, and no physical improvements would be constructed. Wildlife habitat improvements would not be allowed. Livestock grazing would be excluded from the area.

Timber harvest and firewood gathering would not be allowed. Special-use permits would be limited to research and related activities. Transportation facilities would have minimum impacts on the area. Helispots for fire control would not be allowed. Insect and disease outbreaks would not be suppressed. Wildfires that endanger the RNA would be extinguished as quickly as possible. Prescribed fire would be carried out only in conjunction with approved research, or to meet management plan objectives. The acreage and boundary of the RNA, in MA #8, would be finalized with this action.

The environmental consequences of implementing Alternative A are the same as those described in the Final Environmental Impact Statement (FEIS) for the Forest Plan Chapter IV Pages 171-172, with the exception of recommending the area for withdrawal from mineral entry. Salable mineral material sources would not be developed, surface occupancy would not be allowed, and the area would be recommended for withdrawal from mineral entry. Because the Forest has no known locatable or leasable minerals, it is unlikely that the area contains significant metallic mineral or geothermal energy resources. There are no reported hardrock mining claims in the RNA (Woodward, 1995).

The RNA is located within the Hager Grazing Allotment. There are no water sources within the RNA or within a close proximity. An exclosure fence surrounds the RNA. Minor amounts of cattle grazing has occurred in the past due to breaches in the fence. The exclosure fence has since been repaired and is presently in good condition. Establishment of this RNA is not expected to have a direct effect on domestic livestock grazing.

Roaded natural and semi-primitive recreation, including activities such as hunting, hiking, camping, and horseback riding, may currently occur in the RNA at low levels. These activities may continue after establishment, unless conflicts with RNA management objectives develop.

Establishment of the RNA supports the Oregon Natural Heritage Act and would help maintain species and genetic diversity in the area over the long-term.

The proposed boundary descriptions and their subsequent adaptation would have no effect on the importance and use of the area for research and education. The boundary description finalization is necessary to clarify the RNA boundary of Management Area #8.

Alternative B, No Action

Alternative B continues management of the Silver Lake Enclosure RNA as a proposed RNA, according to direction in the Forest Plan. Management would be the same as for Alternative A until the Forest Plan is revised or replaced. The boundary would remain as shown in the Forest Plan. This management direction would include protection from inappropriate encroachment.

The environmental consequences of implementing Alternative B are limited to short-term losses of opportunities to change vegetation conditions through management. These consequences would be the same as those listed in the FEIS for the Forest Plan Chapter IV pages 171-172, and described under Alternative A above. An exception is the Forest would not recommend the area for withdrawal from mineral entry with implementation of Alternative B.

Alternative C, Forest Plan Revision

Alternative C would amend the Forest Plan to drop this area as a proposed RNA. This area would revert back to Management Area #1. This management would include protection from inappropriate encroachment due to the MA #1 designation. Management would fall under the guidelines of those for MA #1 until the Forest Plan is revised or replaced.

The environmental effect would be a change in the vegetative composition within the enclosure due to the removal of the large enclosure fence excluding the use by cattle and deer. The result would be a loss of opportunity for research in the area. This identified Forest cell type would have to be located elsewhere. The area would revert back to MA #1 and 6A.

AGENCIES AND PERSONS CONSULTED

Scoping was conducted during the process of updating information to determine whether to proceed with establishment of the RNA, as proposed in the Forest Plan. Scoping began in May, 1994, when "The Nature Conservancy" specialists reviewed the existing condition of the RNA and finalized the Establishment Record in December, 1994. Public scoping was initiated on May 5, 1995, when a letter describing the Proposed Action showing the finalized boundary was sent, inviting input, to 257 individuals or organizations on the Silver Lake Ranger District and Supervisor's Office-Fremont National Forest mailing lists.

These lists included government agencies, The Klamath Tribe, timber companies, environmental and other special interest groups, and individuals who have expressed an interest in Forest activities.

Ten comments were received. Nine of the comments were in favor of the RNA proposal and one was against the RNA. Many did not make a comment other than stating they were for or against the proposal. Comments ranged from the size of the RNA to cell needs. Two other written comments supported the need to preserve a network of study and research, which could only be brought about by the establishment of the RNA. Based on the scoping comments, there are no significant issues.

APPENDIX A

Response to Comments
on the
Environmental Assessment
for
SILVER LAKE EXCLOSURE RESEARCH NATURAL AREA ESTABLISHMENT

A draft Environmental Assessment (EA) was prepared and a notice was sent to interested persons so that they might comment on the proposed action on October, 10 1995. One comment in favor of the RNA was received.

A notice that the EA was available for comment was published in the Klamath Falls-Herald and News on October 30, 1995, and the Bend Bulletin on October 30, 1995.