

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

ESTABLISHMENT RECORD

for

SAND LAKE RESEARCH NATURAL AREA

Siuslaw National Forest
Tillamook County, Oregon



SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Sand Lake Research Natural Area

Siuslaw National Forest

Tillamook 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 12/21/94
Dick Vander Schaaf, The Nature Conservancy

Recommended by Don Gonzalez Date 1/3/95
Don Gonzalez, District Ranger,
Hebo Ranger District

Recommended by James Furnish Date 1/5/95
James Furnish, Forest Supervisor,
Siuslaw National Forest

Concurrence of Charles Philpot Date 1/18/95
Charles Philpot, Director,
Pacific Northwest Research Station

TITLE PAGE

Establishment Record for
Sand Lake Research Natural Area
within Siuslaw National Forest
Tillamook County, Oregon

ESTABLISHMENT RECORD FOR
SAND LAKE RESEARCH NATURAL AREA
WITHIN SIUSLAW NATIONAL FOREST
TILLAMOOK COUNTY, OREGON

INTRODUCTION

Sand Lake Research Natural Area (RNA) is a 241 acre area belonging to the Siuslaw National Forest in the coastal strip of Oregon, and consists mainly of a large parabola dune system that includes both vegetated and unvegetated dune communities. Land uses of the non-dune portion include limited logging near the highway right-of-way probably dating to its construction. The vegetated communities are dominated by red fescue (Festuca rubra)¹ and beach bluegrass (Poa macrantha). The dune is surrounded by mature Sitka spruce (Picea sitchensis) and western hemlock (Tsuga heterophylla) forest. Royer Creek flows for one half mile through the forested portion of the RNA.

Land Management Planning

Sand Lake RNA was proposed as a potential RNA by the Siuslaw National Forest to meet an unfilled natural area cell need for a native unstablized dune grassland with dune bluegrass and dune wildrye (Oregon Natural Heritage Advisory Council 1988). It was included as a proposed RNA in the Land and Resources Management Plan for the Siuslaw National Forest (USDA Forest Service 1990). The Forest Plan also designates a portion of the RNA as Bald Eagle Habitat, Management Area 4, which has management compatible with the RNA (USDA Forest Service 1990b). Sand Lake includes the following RNA cell needs (or elements) in the Oregon Coast Range Physiographic Province: native unstablized dune grassland with dune bluegrass and dune wildrye (Poa macrantha/Elymus mollis), Sitka spruce/salal community (Picea sitchensis/Gaultheria shallon), and first to third order stream system not on coastal headland in Sitka Spruce zone.

OBJECTIVE

The objective of the Sand Lake RNA is to preserve the native dune community of the unstablized dune grassland and associated adjacent forest and aquatic types of the RNA.

The Sand Lake RNA provides the opportunity to serve as a control area for measuring long-term ecological changes in unmanaged dunes communities as well as for comparing results from recreation impacts and impacts of invasive non-native species on such communities. Remnant native dune communities are rare in the Oregon dunes. Unstabilized dunes without recreational off-road-vehicle impacts are extremely limited. Further, natural interactions between dunes and adjacent forest may be studied on the RNA to understand historical development of the landscape as well as to interpret potential changes in such patterns in the

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

future if components and processes of the ecosystem in managed areas nearby continue to be altered by human activities and introduction of exotic species.

JUSTIFICATION

Sand Lake RNA was selected originally to meet an unfilled RNA cell need for an unstabilized dune grassland. During field surveys of the site it was determined that the adjacent Sitka spruce forest and the creek and associated wetlands also possessed considerable natural values and had functional ecological connections to the sand dune. The dune system is quite active and is advancing into the creek and forest at a rapid rate. Inclusion of the forest and creek into the RNA allow monitoring of the interactions of the dune and adjoining natural communities.

PRINCIPAL DISTINGUISHING FEATURES

Sand Lake RNA contains the following principal features:

1. Parabola dune system. The Sand Lake RNA contains the best example of a parabola dune system in the Pacific Northwest (Wiedemann 1984). Dune forms which are present in the RNA include active parabola dune, stabilized dune ridge, active dune ridge, and sand blowout. Because the RNA site has been closed to off-road vehicles for many years the native dune vegetation is intact. The unstablized dune vegetation is characterized by dune bluegrass and red fescue communities. European beachgrass (Ammophila arenaria), an introduced species, has only a minor presence on the dune system.
2. Sitka spruce forest types. The surrounding forest lies within the Sitka spruce zone (Franklin and Dyrness 1973). Sitka spruce and western hemlock dominate the overstory, with understories of salal, salmonberry (Rubus spectabilis), and swordfern (Polystichum munitum). The forest is impressive in its mature age class (> 150 years) and has developed some attributes of old growth. Of special importance is the interface of the active dune sheet and the forest which is being inundated rapidly.
3. Royer Creek drainage. Royer Creek flows for half a mile through the RNA, adding diversity to the site. The creek has been ponded by beaver activity creating slough sedge (Carex obnupta) dominated wetlands and red alder (Alnus rubra) dominated forested wetlands. The creek and wetlands are in the process of being inundated by the active sand dune at the RNA.

LOCATION

Maps 1, 2, and 3 show the location of Sand Lake RNA. The RNA is located in the Hebo Ranger District of the Siuslaw National Forest. The center of the RNA is at latitude 45° 19' 30" north and longitude 123° 56' 10" west. The 241 acre site lies within sections 5 and 8, Township 3 South, Range 10 West Willamette Meridian.

Boundary

The boundary was created by a survey tie to a Forest Global Positioning System (GPS) 1985 control point #031007. The following values associated with this GPS point are based upon NAD 1927, North Zone State Plane Coordinate System.

Latitude: 45-19-35.95509
Longitude: 123-57-11.51675

X-COORD (EAST): 1112139.509
Y-COORD (NORTH): 624156.394

Theta (mapping) Angle: -2-26-56.257
Grid Factor: 0.9998745

The survey tie was made in Tillamook CS# B-1226. In CS# B-1458, the section line from the 7,8,17, and 18 Section corner to the 1/4 corner between 7 and 8 was surveyed which was a common line surveyed in B-1226. A rotation was made to B-1226 and a transformation was made so that all the landlines were on the same base. Using the Theta Angle and Grid Factor, the Landline ground bearings and distances were projected to a State Plane Coordinate basis. After this was completed, points for the remainder of the boundary were digitized from the Primary Base SAND LAKE Quadrangle and the final boundary was then created.

QUAD SHEET NAME	ANGLE BEARING POINT	DISTANCE FEET (METERS)	DESCRIPTION
SAND LAKE			
1			1/4 Corner between Sections 8 & 17, T.3 S., R.10 W. Corner is at the toe of the road fill of the Cape Lookout Road
	N 2-14-05 E	75.00 (22.86)	Along north-south centerline of Section 8
2			Point on the north-south centerline of Section 8 and the approximate centerline of the Cape Lookout Road
	N 2-14-05 E	106.45 (32.45)	Along north-south centerline of Section 8 to Point #3 and the true Point of Beginning(POB)
3(POB)			Which is on the north-south centerline and is 100 feet perpendicular to the centerline of the Cape Lookout Road
	N 30-59-29 W	4628.82 bearing and distance	This is the inverse (1410.86) between points #3 & #4. The approximate distance along the line that is 100 foot parallel to the highway centerline is 4700 feet.
4			To a point on the section line between Sections 7 & 8 which is approximately 160 feet from the centerline of the Cape Lookout Road. This point is approx. 43 feet north of the monument for the N 1/16 corner as set in Tillamook CS# B-1458

	N 3-41-17 E	1263.85	Along the section (385.22) line between sections	7 & 8
5			The Section Corner 5,6,7,8	
	S 85-57-32 E	1252.17	Along the section (381.66) line between sections	5 & 8
6			The W 1/16 corner between Sections 5 & 8 (which has not been set at this time)	
7	N 21-21-56 E	979.88 (298.67)		
8	N 55-58-56 E	689.91 (210.29)		
9	S 64-33-04 E	332.96 (101.49)		
	S 2-26-56 W	699.91 (213.33)		
10			To a point on the ridge	
11			Point on the ridge	
	S 13-41-56 W	539.93 (164.57)		
12			To a point on the ridge	
	S 32-33-04 E	479.94 (146.29)		
13			To a point on the ridge	
	S 20-47-56 W	768.90 (234.36)		
14			To a point on the ridge	
15	S 34-14-41 E	252.55 (76.98)	The CN 1/16 corner of Section 8 as monumented in Tillamook CS# B-1226	
	S 2-14-05 W	1312.53 (400.06)	Along the north-south centerline of Section 8	

S 2-14-05 W	2430.83 (740.92)	Along the north-south centerline of Section 8
3(POB)	To Point #4	

Area

Total area for the Sand Lake Research Natural Area is approximately 241 acres (97.5 hectares).

Elevations

Elevations range from 200 feet (61 m) in the southeast corner of the sand dune area to an unnamed summit at 680 feet (207 m) in the northeast portion of the RNA.

Access

The Sand Lake RNA is at the northern end of the Siuslaw National Forest (Map 2) in the greater Sand Lake parabola dune system. It is readily accessible from Three Capes Road which runs from Pacific City, 10 miles to the south of the RNA, to Tillamook, 10 miles north of the RNA. The road forms the southwest boundary of the RNA providing easy access to the dunes.

From Tillamook, Oregon, (Map 2--town is 8 miles north of the upper edge of the map) follow Highway 101 south for 10 miles to the Three Capes Road access which is located 1 mile north of the community of Hemlock. Follow the access road, Tillamook County Highway 871, west for 5 miles until it meets the Three Capes Road 1 mile north of the community of Sand Lake. Follow Three Capes Road north for approximately 0.5 miles until the sand dune is encountered. The road traverses the dune with Forest Service boundaries being marked by signs. "No Parking" signs are posted along the highway in the dune area and "Closed To Motorized Vehicles" signs are also posted on the northeast side of the Highway where the RNA is located.

Maps

Sand Lake RNA is located on the USGS 7.5 minute topographic quadrangle map, Sand Lake, Oreg. 1985. The Siuslaw National Forest Recreation Map, 1982, is useful for ownership and general access information but does not delineate the RNA boundaries.

Photos

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

1984 USDA 1084: nos. 109, 110 (stereo pairs)
1989 USDA 189: nos. 54, 59

AREA BY COVER TYPES

Vegetation of the RNA has been surveyed and inventory plots have been established at the site. The following estimates of cover types and plant association groups have been made from the survey information derived from the inventory plots and from air photo interpretation. Map 4 depicts the locations of the natural communities described below.

The most current information regarding the forested portion of the RNA is described in the plant association guide of Hemstrom et al (1986). The non-forested and wetland plant community types are described in unpublished information developed and maintained by the Oregon Natural Heritage Program (1991a).

	Estimated Acres	Hectares
<u>SAF Cover Types</u> (Eyre 1980)		
225 Sitka spruce-western hemlock.....	134	54.2
<u>Kuchler Types</u> (Kuchler 1966)		
Spruce-cedar-hemlock forest.....	134	54.2
(<u>Picea-Thuja-Tsuga</u>)		
<u>Forested Plant Associations</u> (Hemstrom et al 1986)		
<u>Forested Plant Communities</u> (Oregon Natural Heritage Program 1991a)		
1) Sitka spruce/salmonberry-salal (<u>Picea sitchensis/Rubus spectabilis-Gaultheria shallon</u>)		
2) Sitka spruce/swordfern.....	120	48.6
(<u>Picea sitchensis/Polystichum munitum</u>)		
3) Shore pine/salal-western rhododendron.....	14	5.7
(<u>Pinus contorta/Gaultheria shallon-Rhododendron macrophyllum</u>)		
<u>Non-Forested and Wetland Community Types</u> (Oregon Natural Heritage Program 1991a)		
4) Seaside bluegrass-lupine dune community (<u>Poa macrantha-Lupinus littoralis dunes</u>)		
5) Red fescue dune grassland.....	100	40.5
(<u>Festuca rubra dune grassland</u>)		
6) Red alder-western redcedar/slough sedge-.....	7	2.8
skunk cabbage (<u>Alnus rubra</u>)- <u>Thuja plicata</u> / (<u>Carex obovata</u>)- <u>Lysichitum americanum</u>)		
Total.....	241	97.5

PHYSICAL AND CLIMATIC CONDITIONS

Physical Conditions

Sand Lake RNA encompasses the terminal lobe of the extensive parabola dune system at Sand Lake. The dune system is oriented in a southwest-northeast direction. It has been formed in its entirety by the winter storms which typically hit the Oregon coast from the southwest, driving the dune sands onto the flanks of Cape Lookout to the north. The dune at Sand Lake RNA is gently sloped while the adjacent Sitka spruce forest occupies steeper terrain. Royer Creek is a low gradient, second order stream in the RNA.

Climatic Conditions

The Oregon coast climate is characterized by mild temperatures year round, with wet winters and dry summers. Sand Lake RNA lies only 1.5 miles from the ocean and has very typical coastal weather. Summer winds are predominantly from the northwest and are usually light to moderate. Stronger east winds occurring in the fall and spring cause drying conditions that enhance the usually low fire hazard for the region. During the winter, storms come in from the southwest along the general orientation of the parabola dune system. As the RNA is at the terminus of the dune system it receives the full force of winter storms. The adjoining Sitka spruce forest therefore is susceptible to wind throw.

The closest recording NOAA weather station is located in Tillamook, Oregon, 10 miles to the north of the RNA. Climatic conditions at Tillamook should be a good approximation for Sand Lake RNA. The station receives 90.90 inches precipitation annually. The mean annual temperature is 50.3 degrees F. Over 90% of the precipitation falls between October and March. Summer high temperatures rarely reach into the 80's, while winter lows only occasionally dip below freezing. The monthly average climatic data for Tillamook, Oregon taken over the past 75 years is listed below (National Oceanographic and Atmospheric Administration 1989).

Climatic Records for Tillamook, Oregon (NOAA 1989)
Elevation 10 feet; 1910-1988

Month	Mean Temperature		Mean Precipitation	
	°F	°C	inches	mm
January	42.2	5.7	14.87	377.70
February	44.6	7.0	10.11	256.79
March	44.6	7.0	10.43	264.92
April	47.5	8.6	6.13	155.70
May	51.7	10.9	4.03	102.36
June	55.6	13.1	3.04	77.22
July	58.2	14.6	1.29	32.77
August	58.8	14.9	2.00	50.80
September	57.6	14.2	3.73	94.74
October	52.8	11.5	7.64	194.06
November	46.9	8.3	12.52	318.01
December	43.7	6.5	15.07	382.78
Mean Annual	50.3	10.2	90.90	2308.86

DESCRIPTION OF VALUES

Flora

There are two distinct floral groups evident at Sand Lake RNA. One is found on the sand dune system and the other in the surrounding Sitka spruce forest. Each floral group contains relatively few species. The flora of Sand Lake RNA has not been systematically collected or studied. No state or federal threatened, endangered or sensitive plant species are known to occur within the RNA. Observations by several researchers (Alpert 1985, Vander Schaaf 1991, Wiedemann 1984) have resulted in the following list of plants. The vegetation types listed below refer to those noted previously under "Area by Types". Species identifications determined from Hitchcock and Cronquist (1973) and trees were determined from Little (1979).

Scientific name	Common name	Vegetation types					
		1	2	3	4	5	6
TREES							
<u>Alnus rubra</u>	red alder						X
<u>Picea sitchensis</u>	Sitka spruce	X	X				X
<u>Pinus contorta</u>	Shorepine			X			
<u>Pseudotsuga menziesii</u>	Douglas-fir			X			
<u>Thuja plicata</u>	western redcedar	X	X				X
<u>Tsuga heterophylla</u>	western hemlock	X	X				
SHRUBS AND SUBSHRUBS							
<u>Acer circinatum</u>	vine maple	X	X				
<u>Arctostaphylos uva-ursi</u>	bearberry			X			
<u>Cytisus scoparius</u>	scots broom			X			
<u>Gaultheria shallon</u>	salal	X	X				
<u>Lonicera involucrata</u>	black twinberry						X
<u>Rubus spectabilis</u>	salmonberry	X	X				X
<u>Vaccinium ovatum</u>	evergreen huckleberry	X	X				
<u>Vaccinium parviflorum</u>	red huckleberry	X	X				X
FORBS							
<u>Achillea millefolium</u>	yarrow			X			
<u>Blechnum spicant</u>	deer fern	X	X				X
<u>Equisetum hymenale</u>	horsetail			X	X		
<u>Glehnia leiocarpa</u>	beach silvertop			X	X		
<u>Lupinus littoralis</u>	seashore lupine			X	X		
<u>Maianthemum bifolium</u>	false lily of the valley	X					X
<u>Oxalis oregana</u>	Oregon oxalis	X					X
<u>Polygonum paronychia</u>	beach knotweed			X	X		
<u>Polystichum munitum</u>	sword fern						
<u>Solidago spathulata</u>	sticky goldenrod			X	X		
GRASSES AND GRASSLIKES							
<u>Ammophila arenaria</u>	European beachgrass	X	X	X			
<u>Carex macrocephala</u>	large-headed sedge		X	X			
<u>Carex obrupta</u>	slough sedge						X
<u>Elymus mollis</u>	American dunegrass		X	X			
<u>Festuca rubra</u>	red fescue		X	X			
<u>Poa macrantha</u>	seashore bluegrass		X	X			
<u>Scirpus macrocarpus</u>	large bulrush						X

Sand Lake RNA has several natural communities represented within its boundaries (Map 4). The sand dune system is composed of two natural communities: seaside bluegrass-lupine dune community and red fescue dune grassland. The American beachgrass-seaside bluegrass community is found on unstabilized sand throughout the dunes, but is especially prominent on the sand dune ridges. The red fescue dune grassland is found in more stabilized sand areas, notably in the areas which lie between sand dune ridges.

Closely associated with the sand dune system are the dune forests which are found in the extreme southern tip of the RNA and along Three Capes Road. The dune forest community is best described as a shorepine/salal-western rhododendron plant community (Oregon Natural Heritage Program 1991a). At Sand Lake RNA this community is in an early seral stage of succession with kinnikinnik and silver moss (*Rhacomitrium canescens*) dominating the community with only scattered shorepine present. Along Three Cape Road this plant community was artificially established with the stabilization of the roadway via European beachgrass plantings. Eventually Douglas-fir may become prominent in this community.

Two communities are present within the surrounding forest adjacent to the sand dune. The dominant forest plant association is Sitka spruce/salmonberry-salal, with scattered occurrences of Sitka spruce/swordfern. The swordfern association is typically indicative of deeper soils than the salmonberry-salal association (Hemstrom et al 1986). Individual Sitka spruce and western redcedar in the forest often attain diameters in excess of 48 inches (121.9cm), with the associated western hemlock usually somewhat smaller in diameter. The stand apparently originated after a catastrophic fire in the mid 1800's. A few remnant western redcedar snags with fire scars are located near Royer Creek in the RNA.

The wetland community type located along Royer Creek in the northern portion of the RNA is described as red alder-western redcedar/slough sedge-skunk cabbage. Sitka spruce is prominent at the borders of the small wetland. The wetland is a result of beaver activity that has created a series of ponds along the creek. Beaver are active at the site, cutting alder and young cedar both in the wetland and even up the steep slopes of the advancing sand dune. Of particular interest at the RNA is the northern dune front which is advancing into the wetland.

Fauna

Animals have not been systematically studied or inventoried in Sand Lake RNA. The following terrestrial vertebrates are among those most likely to be found in the RNA (Oregon Natural Heritage Program 1991a):

(Note Status Codes for federally listed threatened, endangered, or sensitive species--T=threatened, E=endangered, C2-S=category 2 sensitive.)

<u>Scientific name</u>	<u>Common name</u>	<u>Status</u>
Ambystomatidae		
<u>Ambystoma gracile</u>	Northwestern salamander	
<u>Ambystoma macrodactylum</u>	Long-toed salamander	
Plethodontidae		
<u>Aneides ferreus</u>	Clouded salamander	
<u>Ensatina eschscholtzii</u>	Ensatina	
<u>Plethodon dunni</u>	Dunn's salamander	
<u>Plethodon vehiculum</u>	Western redback salamander	
Salamandridae		
<u>Taricha granulosa</u>	Roughskin newt	
Dicamptodontidae		
<u>Dicamptodon ensatus</u>	Pacific giant salamander	
<u>Rhyacotriton olympicus</u>	Olympic salamander	
Ascaphidae		
<u>Ascaphus truei</u>	Tailed frog	
Bufo		
<u>Bufo boreas</u>	Western toad	
Hylidae		
<u>Hyla regilla</u>	Pacific treefrog	
Ranidae		
<u>Rana aurora</u>	Red-legged frog	C2-S
Anatidae		
<u>Aix sponsa</u>	Wood duck	
<u>Anas crecca</u>	Green-winged teal	
<u>Anas platyrhynchos</u>	Mallard	
<u>Anas acuta</u>	Northern pintail	
<u>Anas cyanoptera</u>	Cinnamon teal	
<u>Anas clypeata</u>	Northern shoveler	
<u>Anas strepera</u>	Cadwall	
<u>Anas penelope</u>	Eurasian wigeon	
<u>Anas americana</u>	American wigeon	
<u>Aythya valisineria</u>	Canvasback	
<u>Aythya americana</u>	Redhead	

<u>Aythya marila</u>	Greater scaup
<u>Aythya affinis</u>	Lesser scaup
<u>Histrionicus histrionicus</u>	Harlequin duck
<u>Clangula hyemalis</u>	Oldsquaw
<u>Melanitta nigra</u>	Black scoter
<u>Melanitta perspicillata</u>	Surf scoter
<u>Melanitta fusca</u>	White-winged scoter
<u>Bucephala clangula</u>	Common goldeneye
<u>Bucephala albeola</u>	Bufflehead
<u>Lophodytes cucullatus</u>	Hooded merganser
<u>Mergus merganser</u>	Common merganser
<u>Mergus serrator</u>	Red-breasted merganser
<u>Oxyura jamaicensis</u>	Ruddy duck

Cathartidae

<u>Cathartes aura</u>	Turkey vulture
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Accipitridae

<u>Pandion haliaetus</u>	Osprey
<u>Haliaeetus leucocephalus</u>	Bald eagle
<u>Circus cyaneus</u>	Northern harrier
<u>Accipiter striatus</u>	Sharp-shinned hawk
<u>Accipiter cooperii</u>	Cooper's hawk
<u>Accipiter gentilis</u>	Northern goshawk
<u>Buteo jamaicensis</u>	Red-tailed hawk

T

Falconidae

<u>Falco sparverius</u>	American kestrel
<u>Falco peregrinus</u>	Peregrine falcon

E

Phasianidae

<u>Dendragapus obscurus sierrae</u>	Blue or sooty grouse
<u>Bonasa umbellus</u>	Ruffed grouse
<u>Callipepla californica</u>	California quail
<u>Oreortyx pictus</u>	Mountain quail

Rallidae

<u>Rallus limicola</u>	Virginia rail
<u>Porzana carolina</u>	Sora
<u>Fulica americana</u>	American coot

Charadriidae

<u>Pluvialis squatarola</u>	Black-bellied plover
<u>Charadrius alexandrinus</u>	Snowy plover
<u>Charadrius vociferus</u>	Killdeer

T

Haematopodidae

<u>Haematopus bachmani</u>	American black oystercatcher
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Scolopacidae

<u>Tringa melanoleuca</u>	Greater yellowlegs
<u>Actitis macularia</u>	Spotted sandpiper
<u>Arenaria interpres</u>	Ruddy turnstone
<u>Arenaria melanocephala</u>	Black turnstone

<u>Aphriza virgata</u>	Surfbird
<u>Calidris alba</u>	Sanderling
<u>Calidris minutilla</u>	Least sandpiper
<u>Calidris ptilocnemis</u>	Rock sandpiper
<u>Calidris alpina</u>	Dunlin
<u>Limnodromus scolopaceus</u>	Long-billed dowitcher
<u>Gallinago gallinago</u>	Common snipe

Laridae

<u>Larus heermanni</u>	Heermann's gull
<u>Larus carus</u>	Mew gull
<u>Larus delawarensis</u>	California gull
<u>Larus californicus</u>	Ring-billed gull
<u>Larus argentatus</u>	Herrin gull
<u>Larus thayeri</u>	Thayer's gull
<u>Larus occidentalis</u>	Western gull
<u>Larus glaucescens</u>	Glaucous-winged gull
<u>Larus hyperboreus</u>	Glaucous gull
<u>Rissa tridactyla</u>	Black-legged kittiwake

Alcidae

<u>Uria aalge</u>	Common murre
<u>Cepphus columba</u>	Pigeon guillemot
<u>Brachyramphus marmoratus</u>	Marbled murrelet
<u>Synthliboramphus antiquus</u>	Ancient murrelet
<u>Ptychoramphus aleuticus</u>	Cassin's auklet
<u>Cerorhinca monocerata</u>	Rhinoceros auklet
<u>Fratercula cirrhata</u>	Tufted puffin

T

Columbidae

<u>Columba fasciata</u>	Band-tailed pigeon
<u>Zenaida macroura</u>	Mourning dove

Tytonidae

<u>Tyto alba</u>	Barn owl
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Strigidae

<u>Otus kennicottii</u>	Western screech-owl
<u>Bubo virginianus</u>	Great horned owl
<u>Glaucidium groma</u>	Northern pygmy-owl
<u>Strix occidentalis</u>	Spotted owl
<u>Asio flammeus</u>	Short-eared owl
<u>Aegolius acadicus</u>	Northern saw-whet owl

T

Caprimulgidae

<u>Chordeiles minor</u>	Common nighthawk
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Apodidae

<u>Chaetura vauxi</u>	Vaux's swift
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Trochilidae

<u>Calypte anna</u>	Anna's hummingbird
<u>Selasphorus rufus</u>	Rufous hummingbird

Alcedinidae

Ceryle alcyon Belted kingfisher

Picidae

Sphyrapicus ruber Red-breasted sapsucker

Picoides pubescens Downy woodpecker

Picoides villosus Hairy woodpecker

Colaptes auratus Northern flicker

Dryocopus pileatus Pileated woodpecker

Tyrannidae

Contopus borealis Olive-sided flycatcher

Contopus sordidulus Western wood-pewee

Empidonax traillii Willow flycatcher

Empidonax difficilis Western flycatcher

Alaudidae

Eremophila alpestris Horned lark

Hirundinidae

Progne subis Purple martin

Tachycineta bicolor Tree swallow

Tachycineta thalassina Violet-green swallow

Stelgidopteryx serripennis Northern rough-winged swallow

Hirundo pyrrhonota Cliff swallow

Hirundo rustica Barn swallow

Corvidae

Perisoreus canadensis Gray jay

Cyanocitta stelleri Steller's jay

Corvus brachyrhynchos American crow

Corvus caurinus Northwestern crow

Corvus corax Common raven

Paridae

Parus atricapillus Black-capped chickadee

Parus rufescens Chestnut-backed chickadee

Aegithalidae

Psaltriparus minimus Bushtit

Sittidae

Sitta canadensis Red-breasted nuthatch

Certhiidae

Certhia americana Brown creeper

Troglodytidae

Thryomanes bewickii atrestus Warner valley bewick's wren

Troglodytes aedon House wren

Troglodytes troglodytes Winter wren

Cistothorus palustris Marsh wren

Cinclidae

Cinclus mexicanus American dipper

Muscicapidae

Regulus satrapa Golden-crowned kinglet

Regulus calendula Ruby-crowned kinglet

Sialia mexicana Western bluebird

Catharus ustulatus Swainson's thrush

Catharus guttatus Hermit thrush

Turdus migratorius American robin

Ixoreus naevius Varied thrush

Chamaea fasciata Wrentit

Motacillidae

Anthus rubescens Water pipit

Bombycillidae

Bombycilla cedrorum Cedar waxwing

Vireonidae

Vireo solitarius Solitary vireo

Vireo huttoni Hutton's vireo

Vireo gilvus Warbling vireo

Emberizidae

Vermivora celata Orange-crowned warbler

Dendroica petechia Yellow warbler

Dendroica coronata Yellow-rumped warbler

Dendroica nigrescens Black-throated gray warbler

Dendroica townsendi Townsend's warbler

Dendroica occidentalis Hermit warbler

Oporornis tolmiei Macgillivray's warbler

Geothlypis trichas Common yellowthroat

Wilsonia pusilla Wilson's warbler

Piranga ludoviciana Western tanager

Rheucticus melanocephalus Black-headed grosbeak

Passerina amoena Lazuli bunting

Pipilo erythrophthalmus Rufous-sided towhee

Spizella passerina Chipping sparrow

Poocetes gramineus Vesper sparrow

Passerculus sandwichensis Savannah sparrow

Passerella iliaca Fox sparrow

Melospiza melodia Song sparrow

Zonotrichia atricapilla Golden-crowned sparrow

Zonotrichia leucophrys White-crowned sparrow

Junco hyemalis Dark-eyed junco

Agelaius phoeniceus Red-winged blackbird

Sturnella neglecta Western meadowlark

Euphagus cyanocephalus Brewer's blackbird

Molothrus ater Brown-headed cowbird

Icterus galbula Northern oriole

Fringillidae

Carpodacus purpureus Purple finch

Carpodacus mexicanus House finch

<u>Loxia curvirostra</u>	Red crossbill
<u>Carduelis pinus</u>	Pine siskin
<u>Carduelis tristis</u>	American goldfinch
<u>Coccothraustes vespertinus</u>	Evening grosbeak

Petromyzontidae

<u>Lampetra ayresi</u>	River lamprey
<u>Lampetra pacifica</u>	Pacific brook lamprey
<u>Lampetra richardsoni</u>	Western brook lamprey
<u>Lampetra tridentata</u>	Pacific lamprey

Salmonidae

<u>Oncorhynchus gorbuscha</u>	Pink salmon
<u>Oncorhynchus keta</u>	Chum salmon
<u>Oncorhynchus kisutch</u>	Coho salmon
<u>Oncorhynchus nerka</u>	Sockeye salmon
<u>Oncorhynchus tshawytscha</u>	Chinook salmon
<u>Oncorhynchus clarki</u>	Cutthroat trout
<u>Oncorhynchus mykiss</u>	Rainbow trout
<u>Salvelinus malma</u>	Dolly varden

Cyprinidae

<u>Richardsonius balteatus</u>	Redside shiner
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Catostomidae

<u>Catostomus macrocheilus</u>	Largescale sucker
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Gasterosteidae

<u>Gasterosteus aculeatus</u>	Threespine stickleback
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Embiotocidae

<u>Cymatogaster aggregata</u>	Shiner perch
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Cottidae

<u>Clinocottus acuticeps</u>	Sharpnose sculpin
<u>Cottus aleuticus</u>	Coastrange sculpin
<u>Cottus asper</u>	Prickly sculpin
<u>Cottus gulosus</u>	Riffle sculpin
<u>Cottus perplexus</u>	Reticulate sculpin
<u>Cottus rhotheus</u>	Torrent sculpin
<u>Leptocottus armatus</u>	Pacific staghorn sculpin

Soricidae

<u>Sorex vagrans</u>	Vagrant shrew
<u>Sorex monticolus</u>	Dusky shrew
<u>Sorex pacificus</u>	Pacific shrew
<u>Sorex bendirii</u>	Pacific water shrew
<u>Sorex trowbridgii</u>	Trowbridge's shrew

Talpidae

<u>Neurotrichus gibbsii</u>	Shrew-mole
<u>Scapanus townsendii</u>	Townsend's mole
<u>Scapanus orarius</u>	Coast mole

Verperilionidae

<u>Myotis lucifugus</u>	Little brown myotis
<u>Myotis yumanensis</u>	Yuma myotis
<u>Myotis evotis</u>	Long-eared myotis
<u>Myotis thysanodes</u>	Fringed myotis
<u>Myotis volans</u>	Long-legged myotis
<u>Myotis californicus</u>	California myotis
<u>Lasiorycteris noctivagans</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

C2-S

Leporidae

<u>Sylvilagus bachmani</u>	Brush rabbit
<u>Lepus americanus</u>	Snowshoe hare

Aplodontiidae

<u>Aplodontia rufa</u>	Mountain beaver
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Sciuridae

<u>Tamias townsendii</u>	Townsend's chipmunk
<u>Spermophilus beecheyi</u>	California ground squirrel
<u>Sciurus griseus</u>	Western gray squirrel
<u>Tamiasciurus douglasii</u>	Douglas' squirrel
<u>Glaucomys sabrinus</u>	Northern flying squirrel

Castoridae

<u>Castor canadensis</u>	Beaver
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Muridae

<u>Peromyscus maniculatus</u>	Deer mouse
<u>Neotoma fuscipes</u>	Dusky-footed woodrat
<u>Neotoma cinerea</u>	Bushy-tailed woodrat
<u>Clethrionomys californicus</u>	Western red-backed vole
<u>Arborimus albipes</u>	White-footed vole
<u>Arborimus longicaudus</u>	Red tree vole
<u>Microtus townsendii</u>	Townsend's vole
<u>Microtus longicaudus</u>	Long-tailed vole
<u>Microtus oregoni</u>	Creeping vole
<u>Ondatra zibethicus</u>	Muskrat

C2-S

Zapodidae

<u>Zapus trinotatus</u>	Pacific jumping mouse
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Erethizontidae

<u>Erethizon dorsatum</u>	Porcupine
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Canidae

<u>Canis latrans</u>	Coyote
<u>Vulpes vulpes</u>	Red fox
<u>Urocyon cinereoargenteus</u>	Gray fox

Ursidae

<u>Ursus americanus</u>	Black bear
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Procyonidae

Procyon lotor Raccoon

Mustelidae

Martes americana Marten

Mustela erminea Ermine

Mustela frenata Long-tailed weasel

Mustela vison Mink

Gulo gulo Wolverine C2-S

Spilogale gracilis Western spotted skunk

Mephitis mephitis Striped skunk

Lutra canadensis River otter

Felidae

Felis concolor Mountain lion

Felis rufus Bobcat

Cervidae

Cervus elaphus Elk

Odocoileus hemionus Black-tailed deer

Emydidae

Clemmys marmorata Western pond turtle C2-S

Anguidae

Elgaria coerulea Northern alligator lizard

Iguanidae

Sceloporus occidentalis Western fence lizard

Colubridae

Contia tenuis Sharptail snake

Thamnophis ordinoides Northwestern garter snake

Thamnophis sirtalis Common garter snake

Several of the species listed above are species of concern in the state of Oregon. The bald eagle is a federally listed Threatened species for which the Siuslaw National Forest has identified in their Forest Plan a designated management area centered on Royer Creek within the RNA (USDA Forest Service 1990b).

Aquatic

Aquatic habitat types represented on Royer Creek consist of a perennial second order stream that flows for only three miles before reaching the Pacific Ocean. Approximately 0.5 miles of stream is within the boundaries of the RNA. The stream has a low gradient where it flows through the RNA. Beaver activity has partially dammed the stream within the RNA forming a forested wetland. This wetland and the stream channel to a lesser extent are being inundated by the advancing sand dune.

Geology

The principal geologic feature at Sand Lake RNA is the parabola dune system. The dunes were formed since the last Pleistocene glaciation and overlay pre-Pleistocene sand deposits. The Sand Lake dunes are associated with Sand Lake estuary and nearby rivers. North of Sand Lake the coastal dunes are associated with the Columbia River though Sand Lake may have received some of its sands from the Columbia River bedload.

Beneath the unconsolidated sand deposits at Sand Lake lies substrata that is volcanic in origin and dates back to the late Eocene/mid-Miocene (over 25 million years ago). Columbia River Basalts formed Cape Lookout directly north of Sand Lake during this time. Significant deposition of silts and clays by streams and rivers was also occurring at this time. These depositions are known as the Astoria Formation and are interfingered with the Columbia River Basalts in the Sand Lake area. Uplifting occurred near the end of the Miocene, 7 million years ago, and continued into the Pliocene as recently as 2 million years ago. Erosional forces have since worn away the overlying sedimentary beds exposing wave cut terraces on which the present sand dunes were formed (Baldwin 1964, Wiedemann 1984).

Soils

Soils information is based on the Order 2 Soil Survey prepared under contract for the U.S. Forest Service (USDA Forest Service 1989). Five soil types have been identified at the RNA. Their locations within the RNA are shown on Map 5. The soil types are described as follows:

Heceta Series

The Heceta series consists of deep, poorly drained soils on deflation plains and in interdunal depressions. They are formed in stabilized dune sand. Slopes range from 0 to 3 percent. Within the RNA Heceta series soils are restricted to a small area along Royer reek that contains sedge dominated wetlands that have been influenced by beaver activity. This area is not a typical deflation plain but rather is located beyond the dune front in the creek drainage. Native vegetation on this series includes sedges, rushes, water-tolerant grasses, willows, wax myrtle and shore pine. The taxonomic classification for these soils is mixed, mesic Typic Psammaquents.

Salander Series

The Salander series consists of deep, well drained soils that formed in mixed colluvium. Depth to parent material ranges from 40 to 80 inches. These soils are on hills, mountains and headlands and have slopes of 0 to 75 percent. At Sand Lake RNA the Salander series is found primarily in the Royer Creek drainage with mature Sitka spruce and western redcedar forests. Vegetation in this series may also include western hemlock and Douglas-fir with brushy understories composed of vine maple, evergreen huckleberry, salmonberry, and swordfern. The taxonomic classification of these soils is medial, isomesic Typic Dystrandeps.

Waldport Series

The Waldport series consists of very deep, excessively drained soils formed in mixed eolian sand. They occur on stabilized dunes and have slopes of 0 to 70 percent. Soil horizons are poorly developed in this series, with organic layers being largely absent. The dunes present in the RNA are composed of these soils. Native vegetation found on these soils includes shorepine, Sitka spruce, salal, huckleberry, wax myrtle, and rhododendron with western hemlock and Douglas-fir in more sheltered areas, and dune grasses and forbs in more exposed or recently stabilized areas. The taxonomic classification for these soils is mixed, isomesic Typic Tropopsamments.

Winema Series

The Winema series consists of deep, well drained soils that formed in colluvium and residuum weathered from sandstone and shale bedrock. Depth to siltstone or shale ranges from 40 to about 80 inches. Winema soils are on rolling to hilly uplands and have slopes of 3 to 70 percent. Within the Sand Lake RNA the Winema series is restricted to a small area in the northern portion of the Royer Creek drainage. Native vegetation found on these soils is grasses, ferns, and scattered Sitka spruce, western hemlock, and Douglas-fir. The taxonomic classification for these soils is medial over clayey, mixed, isomesic Typic Dystrandeps.

Lands

Lands within the Sand Lake RNA are adjacent to the Sand Lake Recreation Area, Siuslaw National Forest. Most of the lands within this designation, Management Area 8 (USDA Forest Service 1990b) are reserved for off-road vehicle (ORV) use. The sand dunes hold a particular attraction to ORV users and Sand Lake is the most popular user area on the northern Oregon coast. The RNA, which lies to the northeast of the Three Capes Road (Map 2) at the site is closed to ORV use. The site is clearly signed and relatively few incursions by ORV users occur there.

Lands adjacent to the RNA are owned by the Forest Service, the Boy Scouts (Camp Merriwether), private individuals, and a timber company. Unless trespass occurs none of these adjacent ownerships are likely to seriously affect the natural values of the RNA.

Cultural

There are no known cultural resources located within the Sand Lake RNA. A complete cultural inventory of the site has not been conducted to date.

IMPACTS AND POSSIBLE CONFLICTS

Mineral Resources

While the dune sand is a potential "mineral resource", there are no current mining claims on Sand Lake RNA. The area will be withdrawn from mineral entry and have no surface occupancy for oil or gas leasing when possible and/or when considered necessary to protect the features for which the RNA was established.

Grazing

There is no grazing resource in the area and no grazing use.

Timber

Sand Lake RNA contains 146 forested acres (59 hectares). The 146 acres of commercial forest would yield approximately 50-70 mbf per acre.

The RNA is surrounded by Siuslaw National Forest lands where timber production and activities to maintain and/or enhance fish and wildlife habitats may take place (USDA Forest Service 1990b). While 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. Windthrow is common in coastal forests, and sites adjacent to harvest areas are particularly prone to this event. Harvest areas may also act as sites for invasions of introduced noxious weeds, such as scots broom, tansy ragwort (Senecio jacobaea), and bull thistle (Cirsium edule).

A small sale of downed western redcedar for cedar shakes was conducted in the forested portion of the RNA in 1986 prior to proposal of the RNA in the Forest Plan. Twenty cords of cedar were allocated in the sale to be cut from the RNA in two sale units totalling 20 acres within the boundaries of the RNA. Less than 20 cords were estimated to have been removed from the site. Damage to the RNA area was slight.

Watershed Values

Royer Creek, which flows through the RNA, is a small watershed that is relatively intact. Watershed values are high, because of the intact nature of the drainage and the protection afforded by the RNA.

Recreation Values

Sand Lake RNA receives more recreation use than many RNAs due to its proximity to the well travelled Three Capes Road. The site is particularly inviting to the hiking public because it is closed to ORVs which dominate the adjacent Sand Lake Recreation Area. Casual recreation use has not been shown to impact the RNA to date, however, it may discourage researchers from doing projects that require establishing equipment or plot markers at the site. Recreational use will be monitored to prevent site alteration. Signing identifying the area as an RNA will not occur, though signing prohibiting ORV use will be maintained.

An unofficial but well established trail is located north of Royer Creek in the Sitka spruce forest within the RNA. The origins of this trail are unknown but the Forest is coordinating efforts with adjacent landowners to discourage continued use of the trail. The trailhead is located across Three Capes Road from the adjacent Camp Merriwether.

Wildlife and Plant Values

Royer Creek drainage within the RNA is designated as a Potential Bald Eagle Habitat, Management Area 4, in the Forest Plan (USDA Forest Service 1990b). The primary goal of this management area is to provide effective nesting habitat for bald eagles and to assist in the recovery of the species (Chap. IV-73, USDA Forest Service 1990b). Standards and Guidelines for Management Area 4 are for the most part consistent with RNA management goals with the exception being habitat enhancement. Enhancement may include nest tree creation if existing nest sites are limiting. As of 1993, nesting sites are not limiting within the RNA. Coordination between District staff regarding the management plans being drafted for the RNA and the Eagle Habitat should resolve any conflicts.

There have been no bald eagles sighted, nor any other threatened, endangered or sensitive wildlife species located within the RNA to date. Red-legged frogs have been found at the site along Royer Creek and are considered a State Sensitive species by Oregon Department of Fish & Wildlife with an undetermined status (Oregon Natural Heritage Program 1991b). No listed or sensitive plant species are known from the area.

Special Management Area Values

Establishment of the RNA does not impact any congressionally designated areas.

Transportation Plans

No roads or trails are planned for this area. There is one existing trail in the RNA that is not part of the Forest Service trail system. Impacts of the existing trail will be monitored, and the Forest will coordinate with adjacent landowners to prevent damage to RNA values.

The adjacent Three Capes Road is maintained by the Tillamook County Highway Department. Continuing contacts with the County Highway Department will be made to ensure that the Department is aware that some techniques to prevent sand from drifting over the road, such as planting introduced species, would be inappropriate to the area if there were a threat that such species could spread into the RNA and seriously impact the native dunegrass communities.

Adjacent Private Lands

Private lands abut the RNA on the southeast, with a common border of approximately 3/4 mile (1.2 km); and on the northwest with a common border of approximately 1/4 mile (0.4 km). The private land to the southeast includes a small portion of the parabola dune and early seral dune forest dominated by shore pine and Douglas-fir. The early successional forest present on the private land is a result of past logging and more recently, encroachment of the sand dune. The private land to the northwest of the RNA consists of mature

Sitka spruce forest in excellent condition. Development of the private lands is unlikely in the near future.

MANAGEMENT PRESCRIPTION

Management and protection of Sand Lake RNA will be directed toward maintaining natural ecological processes. Activities that would disturb or modify ecological processes will not be permitted to the extent possible.

Sand Lake RNA is included, along with other RNAs, in the Siuslaw National Forest Plan in Management Area 13 (USDA Forest Service 1990b). The Forest Plan management prescription for RNAs is to maintain a land area where natural conditions and processes are allowed to dominate. Standards and guidelines for management are noted in the Forest Plan for the management area. (See Appendix A.) Also applicable are the standards and guidelines for Management Area 4, Bald Eagle Habitat, which is within the northern portion of the RNA. (See Appendix B.)

A management plan to include both management and monitoring will be developed.

Vegetation Management

Standards and guidelines for RNAs, Management Area 13, address vegetation management under several different headings (USDA Forest Service 1990b). The overall management direction for all RNAs is to preserve the naturally occurring physical and biological processes at the site.

Wildfire will be managed following guidelines to be developed in the management plan which may allow suppression methods and equipment that will minimize disturbance to the special features of the area (USDA Forest Service 1990b). While there is little threat to the sand dune system from wildfire, the desired condition of the Sitka spruce forest dictates that fires be aggressively suppressed. No vegetation management through prescribed burning is anticipated.

Introduced species and weedy native species are an ever-present concern at the RNA. This is most true in the sand dune system where European beachgrass already has a small foothold on sand ridges within the RNA. European beachgrass was introduced to the coastal dunes after the turn of the century, in an effort to stabilize dune surfaces. The grass has spread to nearly all coastal dunes in the Pacific Northwest causing stabilization of the foredune and loss of native dune grassland and shrubland communities. European beachgrass was planted along the Three Capes Road to stabilize the roadbed. Invasion of the stabilized road right-of-way by shorepine and scots broom is evident in several areas of the RNA. Introduced species will be monitored. If and where found to be unacceptable, introduced or weedy species will be controlled as part of an integrated vegetation management plan to be developed as part of the RNA management plan.

Overall, introduced species are not currently threatening the integrity of the dune plant communities. The Oregon Native Plant Society and The Nature Conservancy have organized beachgrass eradication efforts for several years to stem the advance of the invasion.

Fences and Protective Barriers

Fences are not required at the RNA. Protective barriers along Three Capes Road need to be installed at several locations to discourage the few ORV users that trespass onto the RNA. The management plan will provide a schedule to ensure that ORV closure signs will be maintained along the appropriate boundaries to inform the public of the closed area.

ADMINISTRATION RECORDS AND PROTECTION

Administration and protection of Sand Lake RNA will be the responsibility of the Siuslaw National Forest. The District Ranger, Hebo Ranger District, P.O.Box 324, Hebo, Oregon 97122, has direct responsibility.

The Director of the Pacific Northwest Forest and Range Experiment Station, P.O. Box 3890, Portland, Oregon 97208, will be responsible for any studies or research conducted in the area, and requests to conduct research in the RNA should be referred to her/him. 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 Forest and Range Experiment Station.

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

District Ranger, Hebo Ranger District, P.O. Box 324, Hebo, Oregon 97122
Forest Supervisor, Siuslaw National Forest, P.O. Box 1148, Corvallis, Oregon 97339
Director, Pacific Northwest Forest and Range Experiment Station, P.O. Box 3890, Portland, Oregon 97208
Region 6 Research Natural Area Database, Forest Science Databank, Forest Science Department, Oregon State University, Corvallis, Oregon

Archiving

The Portland office of the Pacific Northwest Forest and Range Experiment Station will be responsible for maintaining the Sand Lake RNA research data file and list of herbarium and species samples collected. The RNA Scientist has established 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 Region 6 Research Natural Area Database, associated with the Oregon State University Forest Science Databank in Corvallis, Oregon.

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SAND LAKE RESEARCH NATURAL AREA

I certify the enclosed boundary description of the Sand Lake Research Natural Area was prepared under my direct supervision

1050 ORE
State Reg. No.


L.W. Hunnemüller
Forest Land Surveyor

11/16/93
Date

Cover Page Info for RNA Establ. Record

Name: Sand Lake Research Natural Area

Region: 6

Station: Pacific Northwest

State: Oregon

County: Tillamook

Boundary Certified on page 27.

TMIS #: 00

Date Reg. Forester signed: _____

Lat.: 45-19-35.95509

Long.: 123-57-11.51675

<u>1980 SAF</u>	<u>Acres</u>	<u>Ha</u>	<u>1966 Kuchler</u>	<u>Acres</u>	<u>Ha</u>
225	134	54.2	1	134	54.2
<hr/>					
<u>Total:</u>					
225	134	54.2	1	134	54.2

Access (under "location"): map vs. description - description

Original maps, or photocopies - original topographic map

Photos included - no

Abutted by non-FS land - state highway on one side

SAF & Kuchler types consistent? (see page _____)

Climate records: length of record 78y Distance to weather sta. 10 mi north

Fauna & Flora authorities: Little (1979); Hitchcock and Cronquist (1973); Oregon Natural Heritage Program (1991).

Land use conflicts? Grazing? Trails? Recreation? There are no trails and no grazing. ORV use is allowed across the road, so it is possible that illegal ORV use could occur in the RNA.

APPENDIX A

**SIUSLAW FOREST PLAN
MANAGEMENT AREA 13**

Management Area 13 (Research Natural Areas)

Prescription

Maintain a land area where natural conditions and processes are allowed to dominate (C12, S10).

Introduction

Research Natural Areas (RNAs) are physical or biological units in which current natural conditions are maintained insofar as possible (at best, an entire small drainage basin embracing a number of terrestrial and aquatic situations). These units are part of a national system of examples of major ecosystems (FSM 4063). This MA contains the existing Flynn Creek RNA, which will be managed in a manner consistent with the Establishment Report (McKee 1977), and the potential Reneke Creek and Sand Lake RNAs.

Management prescriptions for this area help resolve the portion of Issue 12 (see Chapter III) which is concerned with areas of the Forest reserved as RNAs for research on natural systems. This issue is also partly resolved by management of the existing Neskowin Crest RNA (in MA 6) and the potential Cummins/Gwynn Creeks RNA (in MAs 5 and 12).

If any recommended potential RNA is rejected for formal RNA designation after the site-specific establishment report is completed, the area will be restudied to determine which MA it should be assigned to. A new assignment will be an amendment to the Forest Plan.

All land in this MA is categorized as "unsuitable for timber production."

Goals

The primary goal is to preserve naturally occurring physical and biological units where natural conditions are maintained insofar as possible for the purposes of: 1) comparison with those lands influenced by man; 2) provision of educational and research areas for ecological and environmental studies; and 3) preservation of gene pools of typical, rare, and T&E plants and animals. An additional goal is to provide habitat for the bald eagle.

Desired Condition

The desired condition consists of naturally occurring physical and biological processes that are operating without undue human intervention. The environment is preserved in its natural condition as a source of gene pools and for education and research on plant and animal communities.

In general, natural physical and biological processes prevail without human intervention. Animal life representative of the vegetative conditions is present. The only signs of logging are felling of trees which may be hazardous to facilities or people using adjacent roads. Some recreational activities compatible with natural systems, such as hiking and birdwatching, may be present. The desired condition for each area follows:

Flynn Creek - This 688-acre RNA consists of the entire 560-acre, heavily forested drainage of Flynn Creek, plus 130 acres of buffer outside the drainage which is needed to prevent blowdown. The area is in an essentially natural state, with highly productive terrestrial and aquatic systems. Anadromous salmonids, particularly coho salmon and searun cutthroat trout, live in Flynn Creek. The vegetation is dominated by a mature Douglas-fir (100-150 years old) and sword fern community that is interspersed with red alder stands of various sizes.

Reneke Creek - This 480-acre area consists of the drainage of upper Reneke Creek and two matched perennial tributaries flowing from red-alder-dominated, southwest-facing slopes. The area is in an essentially natural state, with productive terrestrial and aquatic systems. Limited numbers of anadromous salmonids, particularly chum salmon, live in the lower 1/2 mile of stream within the area. The vegetation on the ridge top and upper slopes is mostly Sitka spruce, western hemlock, and Douglas-fir, while red alder is common further down the slopes and in riparian areas.

Sand Lake - This 241-acre area is the most inland portion of a large unstabilized parabola dune system and adjacent mature forest. It is in an essentially natural state. The forest along the northwest ridge of the dune is in the process of being inundated by the rapidly advancing dune front, which rises up to 130 feet. Dune vegetation is in a natural condition, covers less than 30% of the sand, and consists mostly of native seashore bluegrass-red fescue grasses and other native herbaceous plants. A Douglas-fir/rhododendron community comprises the dune forest, with most trees exceeding 80 feet in height.

Standards and Guidelines for MA 13

All research proposals will be approved by the PNW Station Director and any applicable permits obtained from the appropriate NFS line officer. Research should be limited to non-consumptive, non-destructive, and essentially observational activities. Some collecting of soil, plants, or animal specimens (state coordination needed) may be permitted on a case-by-case basis.

Follow the direction for "Protection and Management" of existing RNAs in FSM 4063.3 and the Establishment Report for Flynn Creek RNA (McKee 1977). Specific S&Gs are as follows:

Recreation

- 13-01 Recreational Activities** - Discourage overnight camping; recreational use within 200 feet of lakes, ponds and streams; pack and saddle stock use; and hunting and fishing. Allow low-density, non-motorized recreation uses to the extent that they do not compromise the intent or research integrity of the RNA. Recreation opportunities will be at the roaded-natural ROS level.
- 13-02 ORV Use** - Prohibit all recreational ORV use.
- 13-03 Closures** - Institute closures or permits if recreational uses threaten research or educational values.
- 13-04 Educational Use** - Direct educational use of an RNA toward the graduate level, but it may be approved for any educational level.
- 13-05 Interpretation** - Prohibit on-site interpretive or demonstrative facilities.
- 13-06 Publicity** - Avoid publicity that would attract the general public to the area.
- 13-07 Existing Trails** - Allow existing trails to remain as long as RNA objectives are not compromised.
- 13-08 Trail Construction** - Construct new trails only if they are needed for research purposes.

Wildlife

- 13-09 Exotic Species** - Prohibit introduction of exotic plant and animal species.

Management Area 13

- 13-10 **Reintroductions** - Permit reintroduction of former native species as long as objectives of the RNA are met.
- 13-11 **Animal Control** - Consider control of excessive animal populations where they threaten RNA objectives.
- 13-12 **Habitat Enhancement** - Approve habitat improvement projects if they meet objectives of the RNA.
- 13-13 **Bald Eagle** - Consider protection of any potential bald eagle site in planning for the area.

Fish

- 13-14 **Stocking** - Prohibit fish stocking, except as provided under 13-10 above.

Range

- 13-15 **Grazing** - Do not permit grazing of domestic livestock within the RNA unless it is essential to maintain a specific vegetation type.
- 13-16 **Establishment Report** - Complete establishment reports for the potential Reneke Creek and Sand Lake RNAs and submit them for approval within 3 years.

Timber

- 13-17 **Timber Harvest** - Prohibit cutting and removal of all vegetation, including firewood, except as part of approved scientific investigations.

Watershed

- 13-18 **Soil Disturbance** - Develop and implement rehabilitation plans in the event of soil disturbing activities such as fire suppression.

Minerals

- 13-19 **Withdrawal** - Process mineral withdrawal recommendations after establishment.

Lands

- 13-20 **Special Uses** - Approve minimal, temporary, or semi-permanent research facilities and installations under permit.
- 13-21 **Rights of Way** - Honor rights-of-way easements, including utility corridors, existing before RNA establishment. Discourage upgrading that would compromise objectives of the RNA.
- 13-22 **FERC Permits** - Do not recommend Federal Energy Regulatory Commission licenses or permits that compromise objectives of the RNA.
- 13-23 **Land Acquisition** - Retain all NFS lands and acquire private inholdings (Ownership Group II).

Transportation

- 13-24 Hazard Trees** - Fell hazard trees along boundary trails or roads for safety. Keep felled trees in place, unless lying across the trail or road.

Facilities

- 13-25 Buildings** - Allow buildings or other facilities only if they are temporary and serve research purposes.

Protection

- 13-26 Suppression Methods** - Use suppression methods and equipment that will minimize disturbance to special features of the area.
- 13-27 Fire Support** - Locate fire camps, helispots and other temporary facilities or improvements outside the area if possible.
- 13-28 Rehabilitation** - Rehabilitate the fire area after suppression actions to return it to a natural condition consistent with MA objectives.
- 13-29 Fire Retardants** - Avoid chemical fire retardants if possible.
- 13-30 Fuel Management** - Allow fuels to accumulate at natural rates unless they threaten the objectives of the RNA.
- 13-31 Pest Management** - Take action against insects or diseases only if the outbreak drastically alters natural ecological processes within the RNA.



APPENDIX B

**SIUSLAW FOREST PLAN
MANAGEMENT AREA 14**

Management Area 4 (Bald Eagle Habitat)

Prescription

Provide nest sites for bald eagles; enhance habitats to contribute to removal of T&E species from state and federal lists C20, S20).

Introduction

The bald eagle is listed by the U.S. Fish and Wildlife Service (USFWS) as a threatened species in Oregon. Habitat must be provided to assist in recovery of the species and to ensure that the population will not become endangered. The MA consists of 23 nest sites (all seven known on the Forest and another 16 potential sites). Until completion of an individual nest site plan, at least 125 acres of habitat will be protected at each site.

Management prescriptions for this area help resolve the portion of Issue 5 (See Chapter III) which is concerned with amounts of habitat maintained for T&E and sensitive species.

All land in this MA is categorized as "unsuitable for timber production."

Refer to Forest-wide S&Gs for T&E species for additional guidance regarding management of bald eagle habitat in areas outside of MA 4.

Goals

The primary goals for MA 4 are to provide effective nesting habitat for bald eagles and to assist recovery of the species.

Desired Condition

Habitat consists of mature and old-growth forest with numerous large conifer trees (50-90 inches in diameter). Large snags with sizeable limbs for perching are common. Activities are not disturbing the eagles, especially during nesting and fledging periods. Roads and trails may be present, but may be closed during critical seasons.

Standards and Guidelines for MA 4

General

- 04-01 **Prohibited Activities** - Do not allow activities which are incompatible with either bald eagle nesting and roosting or seasonal concentrations of eagles.
- 04-02 **Consultation** - Ensure that all proposed activities conform with consultation requirements with the USFWS.

Recreation

- 04-03 **Recreational Use** - Allow dispersed recreational use which does not adversely affect bald eagle recovery.
- 04-04 **ROS Class** - Manage recreational opportunities to be in the roaded-natural ROS class.

Management Area 4

- 04-05 Trail Construction** - Permit construction of new trails and other developments where site-specific biological review and environmental analysis have determined that there will be no adverse effects on bald eagle recovery objectives.

Visual Quality

- 04-06 VQO Management** - When a portion of MA 4 is seen from the sensitive viewing location (road, recreation site) in a viewshed assigned special scenic protection, manage the portion which is seen to meet or exceed the VQO assigned to the corresponding portion of the viewshed. See Table IV-11 for a list of viewsheds which are assigned special scenic protection, and their VQOs. See the Glossary or USDA Forest Service (1974) for a description of VQOs.

Wildlife

- 04-07 Boundary Adjustments** - In cooperation with USFWS and ODFW, adjust the boundaries of a nest site if patches of habitat larger than 5 acres are lost. Ensure that replacement stands best meet long-term needs of the bald eagle.
- 04-08 Habitat Management Plan** - Within 2 years after approval of this Forest Plan, prepare a management plan for each nest site (existing and potential). Develop the plans to meet informal consultation requirements with USFWS.
- 04-09 Habitat Protection** - Until completion of site-specific management plans, protect at least 125 acres of habitat at each site (where this much NFS land is present; Anthony and Issac 1989). Ensure that the site is a contiguous block of the best available habitat.
- 04-10 Habitat Enhancement** - Coordinate habitat enhancement opportunities with the USFWS. Do not permit activities within 125-acre active nest areas between January 1 and August 31.
- 04-11 New Sites** - If bald eagles establish a nest outside a potential bald eagle nest site, substitute an appropriate area around the newly established nest in place of a potential site.

Timber

- 04-12 Timber Harvest** - Do not program or normally allow timber harvest and firewood cutting. Do not salvage dead or down material. Permit exceptions on a case-by-case basis for one or more of the following purposes, provided that environmental analysis shows that the activity would not conflict with meeting goals of the MA and consultation requirements with USFWS have been met:

- Wildlife and fish habitat enhancement or maintenance (including manipulation of stands to enhance bald eagle habitat);
- Protection of stands imminently threatened by catastrophic outbreaks of insects or disease;
- Research (related to the management direction for this MA);
- Safety of people or facilities;
- Development and maintenance of roads and trails; and

- Occasional use of trees as logging cable anchors to harvest timber from adjacent lands, provided the trees are not felled.

Protection

- 04-13 Fire Suppression** - Suppress any wildfires and limit them to the smallest possible size.
- 04-14 Suppression Methods** - Use suppression methods and equipment that minimize disturbance to the land surface and vegetation.
- 04-15 Tree Felling** - Fell snags and large old live trees only if they either are safety hazards or will hamper control efforts, resulting in further resource damage.
- 04-16 Rehabilitation** - Rehabilitate the fire area after suppression actions to return it to a natural condition consistent with MA objectives.

Lands

- 04-17 Land Acquisition** - For occupied sites, retain lands in NFS ownership and acquire private lands as they become available.
- 04-18 Land Acquisition** - For potential sites, retain lands in NFS ownership unless lands with similar or better habitat conditions can be acquired. Acquire private lands if they become available.

Transportation

- 04-19 Road Closures** - Roads may be closed to public access either year-round or during critical seasons. Administrative use of roads may be permitted if necessary.
- 04-20 Road Construction** - Construct roads on a case-by-case basis if environmental analysis shows that goals of the MA will be met.



DECISION NOTICE / DESIGNATION ORDER
and
FINDING OF NO SIGNIFICANT IMPACT

Establishment of Sand Lake Research Natural Area

USDA - Forest Service
Siuslaw National Forest
Hebo Ranger District
Tillamook County, Oregon

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 Sand Lake Research Natural Area (RNA). It shall be comprised of 241 acres of land in Tillamook County, Oregon, on the Hebo Ranger District of the Siuslaw National Forest, as described in the section of the Establishment Record entitled "Location."

The Sand Lake Research Natural Area was recommended for establishment in the Record of Decision for the Siuslaw National Forest Land and Resource Management Plan (Forest Plan), March 7, 1990, to provide a relatively undisturbed parabola dune system on the Oregon Coast. 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 and accompanying Final Environmental Impact Statement which are available to the public.

The Regional Forester has reexamined the Sand Lake area to ensure that the environmental effects of establishing the area as a Research Natural Area (RNA) have not changed since 1990. This analysis is documented in the attached Environmental Assessment. Based on the analysis in the Environmental Assessment, it is my decision to adopt Alternative A, to establish Sand Lake as a Research Natural Area. Alternative A is selected because it provides long-term protection and recognition of a native unstabilized dune grassland and associated adjacent mature Sitka spruce and western hemlock forest. The Sand Lake RNA will be managed in compliance with all relevant laws, regulations and Forest Service Manual direction regarding RNAs, and in accordance with the management direction identified in the Forest Plan, pages IV-104 through IV-107.

The alternative considered was Alternative B, the "No Action" alternative, which would continue management of the Sand Lake area as a "proposed" RNA. Alternative B was not selected because it would only guarantee protection of the Sand Lake area for a short-term--10 years or less--until the Forest Plan is amended or revised.

Alternative B is consistent with the Forest Plan. The proposed action (Alternative A) is also consistent with the management direction, but it is not consistent with the land allocation for the Sand Lake area in the Forest Plan. The Siuslaw Forest Plan is hereby amended to change the allocation of the Sand Lake area from "proposed" to Established RNA. This is a non-significant amendment of the Forest Plan, because it is not significant in relation to the National Forest Management Act regulations [36 CFR 219], and is consistent with the long-term resource management goals and objectives of the Forest Plan [36 CFR 219.10(f)].

Based on the environmental analysis documented 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]:

A. Context

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

B. Intensity

1. There are no known effects on public health and safety.
2. No significant direct, indirect or cumulative impacts to the natural resources or other components of the human environment are anticipated.
3. Effects on the human environment are not uncertain, do not involve unique or unknown risks, and are not likely to be highly controversial.
4. There are no known effects on historic or cultural resources, park lands, prime farmlands, wetlands, or wild and scenic rivers. Effects of establishing the RNA are to protect the ecologically unique area. No significant adverse effects are anticipated to any environmentally sensitive or critical area.
5. The action is not likely to establish a precedent for future actions with significant effects.
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 habitats.
7. The proposed action is consistent with the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 1994).
8. The proposed action is consistent with Federal, State and local laws and requirements for the protection of the environment.

Legal notice of this decision will appear in The Oregonian. The Forest Supervisor of the Siuslaw National Forest shall notify the public of this decision and mail a copy of the Decision Notice/Designation Order to all persons on the Siuslaw Forest Land and Resource Management Plan mailing list.

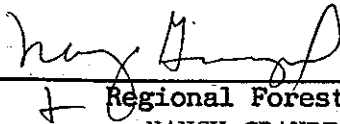
Implementation of this decision shall not occur within 7 days following publication of the legal notice of the decision in The Oregonian.

This decision is subject to appeal pursuant to 36 CFR 217. Any written Notice of Appeal of this decision must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal. A written notice of appeal must be submitted to:

Chief, USDA Forest Service
14th and Independence Ave., S.W.
PO Box 96090
Washington, D.C. 20090-6090

within 45 days of the date of legal notice of this decision.

For further information, contact Cindy McCain, Siuslaw National Forest, P.O. Box 1148, Corvallis, Oregon, 97333, or by phone at (503) 750-7000.



Regional Forester
NANCY GRAYBEAL (for)
Deputy Regional Forester

March 29, 1995
Date

ENVIRONMENTAL ASSESSMENT

Establishment of Sand Lake RNA

Siuslaw National Forest
Hebo Ranger District
Tillamook County, Oregon

Proposed Action

The proposed action is to establish the Sand Lake "proposed" Research Natural Area (RNA) identified in the Land and Resource Management Plan (Forest Plan) for the Siuslaw National Forest (1990) as the Sand Lake RNA, and to manage the area according to direction provided in the Forest Plan, pages IV-104 through IV-107. The proposed action, formal designation of the RNA by the Chief of the Forest Service, will amend the Forest Plan. The Sand Lake RNA is located in Sections 5 and 8, T. 3 S., R. 10 W. Willamette Meridian.

Purpose of and Need for Action

The purpose of establishing the Sand Lake RNA is to contribute to a series of RNAs designated to "illustrate adequately or typify for research or education purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics or scientific interest and importance" [36 CFR 251.23]. Sand Lake RNA contributes to this series of RNAs by providing an example of a native unstabilized dune grassland in the Oregon Coast Range Physiographic Province and a Sitka spruce/salal community. It also provides a first to third order stream system not on a coastal headland in the Sitka Spruce zone. It is in an essentially natural state with dune vegetation covering less than 30% of the sand, as described in the Forest Plan, page IV-105 and Final Environmental Impact Statement (FEIS) for the Forest Plan, pages III-99 and IV-78. An evaluation by the Regional RNA Committee, pursuant to direction in Forest Service Manual (FSM) 4063.04(b), of the need for RNAs identified this type as suitable and desirable for inclusion in the national network. Establishment of the Sand Lake RNA provides long-term protection and recognition of this type.

The Sand Lake area was identified in the Forest Plan as a "proposed" RNA based on the relatively undisturbed condition of the inland parabola sand dune grassland and adjacent Sitka spruce forest and creek. Inclusion of the forest and creek allow research of the interactions of the dune and adjoining natural communities. Disturbance by off-road vehicles (ORV) has altered much of the natural vegetation elsewhere in the dune system at Sand Lake, making this RNA unique along the Oregon Coast.

During the forest planning process, public comment supported establishment of a RNA in the area. Site conditions have been recently reviewed and no significant changes have occurred. Information about the proposed designation was sent in April 1993 to adjacent land owners and interested publics, including Hanson Natural Resource Co., Hampton Resource, Inc., Boy Scouts of America, and The Nature Conservancy. No concerns were expressed.

Conditions and environmental effects of designation are the same as described in the Final EIS for the Forest Plan, page IV-78. Designation of alternate RNAs for protection of these types was not considered during Forest Plan development, because there are no other examples available to fill these RNA cell needs. Sand Lake was determined at that time to provide a unique opportunity for inclusion in the national network for protection.

Alternatives Considered and Environmental Consequences

Alternative A, Proposed Action

Alternative A would designate a 241-acre area as the Sand Lake RNA. The boundary was located precisely during development of the Establishment Record (attached) and size of the area confirmed. Management of the area prohibits all recreational ORV use, discourages overnight camping and avoids publicity that would attract general public use in the area. A potential bald eagle site in the Sitka spruce area will be protected from disturbance, wildlife habitat improvement projects may be allowed if they meet RNA objectives, and control of excessive animal populations may occur if they threaten RNA objectives. No timber harvests or removal of vegetation or firewood is allowed. A complete set of standards and guidelines for management of the RNA is presented in Forest Plan, pages IV-105 through IV-107.

The environmental consequences of Alternative A are described in the final EIS for the Siuslaw Forest Plan, page IV-77 through IV-80. These consequences include loss of the opportunity to develop the area for purposes other than research, particularly for recreational ORV use. The vegetation would be allowed to grow without human influence and the opportunity for fuel loading and wildfire may increase. High water quality and fish habitat would be maintained; wildlife associated with mature Sitka spruce forests would benefit, while those associated with early successional stages could be adversely affected. There are no significant cumulative effects on any resource of establishing the RNA.

The direction in the Forest Plan for established RNAs also includes reasonably foreseeable actions such as withdrawal of the area from mineral entry (Forest Plan, page IV-106). The general consequences of withdrawal are discussed in the final EIS for the Forest Plan, pages IV-91 through IV-92. Site-specific consequences will be disclosed in more detail when a mineral withdrawal recommendation is processed.

Alternative B, No Action

Alternative B continues management according to direction in the Forest Plan, pages IV-105 through IV-107, for both existing and proposed RNAs. This management would be the same as for Alternative A, but would be subject to change with potential Forest Plan amendments.

The environmental consequences of Alternative B, "No Action" alternative, are described in the final EIS for the Forest Plan, pages IV-91 through IV-92. They would be the same as for Alternative A. There are no significant cumulative effects of this alternative.

Agencies and Persons Consulted

The following groups and persons were contacted during preparation of the establishment record and/or during forest plan monitoring:

- The Nature Conservancy - to assist with development of the establishment record.
- Boy Scouts of America - for any new concerns about establishment of the RNA and to seek cooperation in restricting use of the area to dispersed, low-impact hiking by Boy Scouts from the adjacent summer camp.
- Hanson Natural Resource Co. - for any new concerns about establishment of the RNA.
- Hampton Resource, Inc. - for any new concerns about establishment of the RNA.
- Sarah Greene, Pacific Northwest Region RNA Coordinator - for any new management concerns.
- Hebo Ranger District resource specialists - for any new management concerns.

No comments were received that were not in support of establishment of the Sand Lake RNA.

PUBLIC NOTICES

8

Public Notices 8

LEGAL NOTICE**OREGON FRYER PRODUCERS COMMISSION ELECTION**

Notice is hereby given that a producer election will be held Apr. 13, 1995 through May 4, 1995 pursuant to provisions of OR 576, for election of commissi
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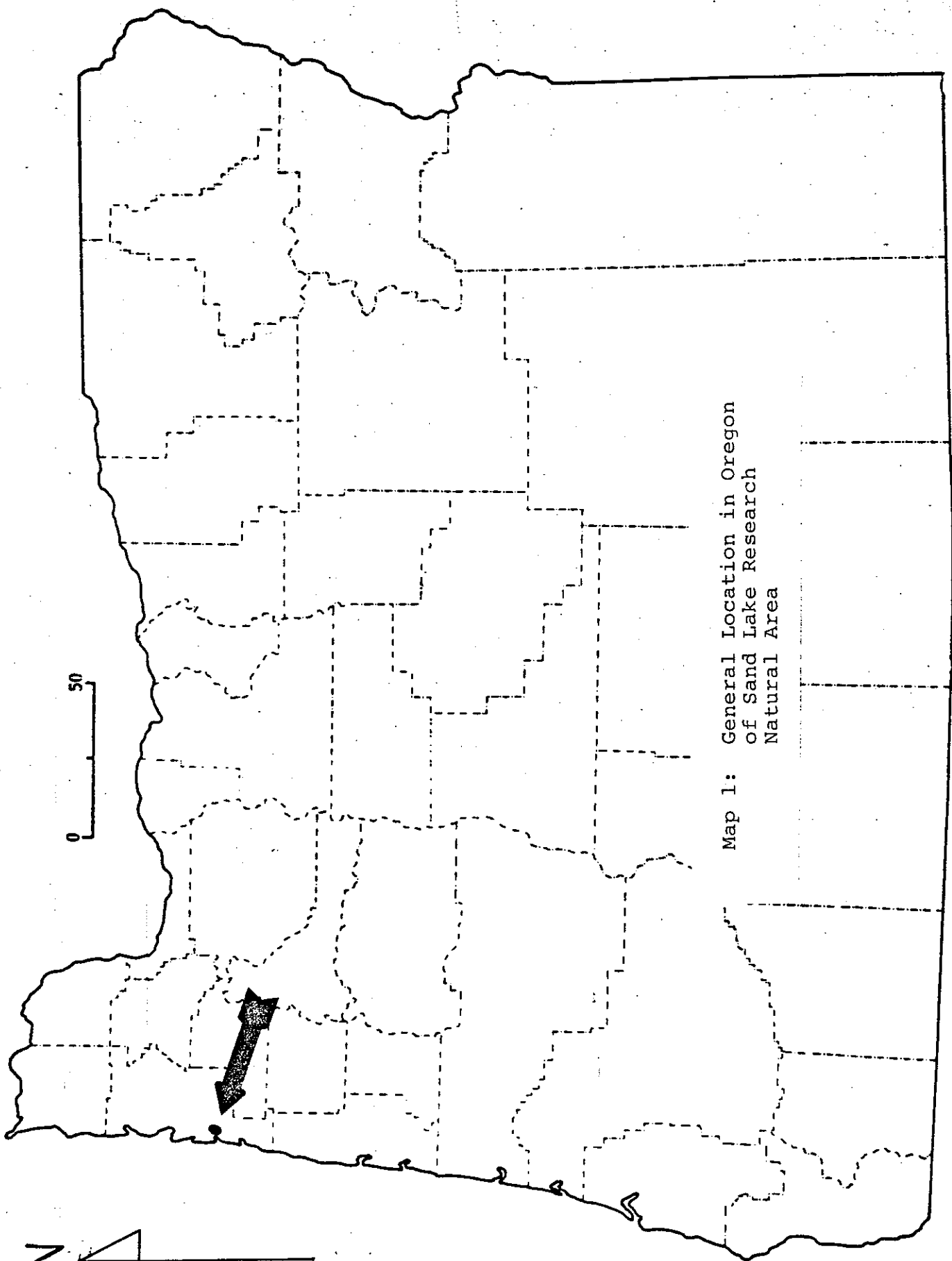
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THE OREGONIAN, FRIDAY, MARCH 31, 1995

NOTICE OF DECISION. On March 29, 1995, Regional Forester made a decision to establish the 691 acre **Three Creek Research Natural Area** on the Sweet Home Ranger District of the Willamette National Forest in Linn County, Oregon. This decision will be implemented after April 7, 1995. A copy of the Decision Notice/Designation Order and Finding of No Significant Impact is available upon request from the Regional Office, Environmental Coordination, 333 S.W. First Avenue, (P.O. Box 3623), Portland, Oregon 97208. This decision is subject to appeal pursuant to Forest Service regulations 36 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 Three Creek Research Natural Area, contact Alice Smith, Sweet Home Ranger District at (503) 367-5168.

NOTICE OF DECISION. On March 29, 1995, Regional Forester made a decision to establish the 660 acre **Cannon Well Research Natural Area** on the Chemult Ranger District of the Winema National Forest in Klamath County, Oregon. This decision will be implemented after April 7, 1995. A copy of the Decision Notice/Designation Order and Finding of No Significant Impact is available upon request from the Regional Office, Environmental Coordination, 333 S.W. First Avenue, (P.O. Box 3623), Portland, Oregon 97208. This decision is subject to appeal pursuant to Forest Service regulations 36 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 Cannon Well Research Natural Area, contact Carol Goularte, Chemult Ranger District at (503) 365-7001.

NOTICE OF DECISION. On March 29, 1995, Regional Forester made a decision to establish the 241 acre **Sand Lake Research Natural Area** on the Hebo Ranger District of the Siuslaw National Forest in Tillamook County, Oregon. This decision will be implemented after April 7, 1995. A copy of the Decision Notice/Designation Order and Finding of No Significant Impact is available upon request from the Regional Office, Environmental Coordination, 333 S.W. First Avenue, (P.O. Box 3623), Portland, Oregon 97208. This decision is subject to appeal pursuant to Forest Service regulations 36 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 Sand Lake Research Natural Area, contact Cindy McCain, Siuslaw National Forest at (503) 750-7000.

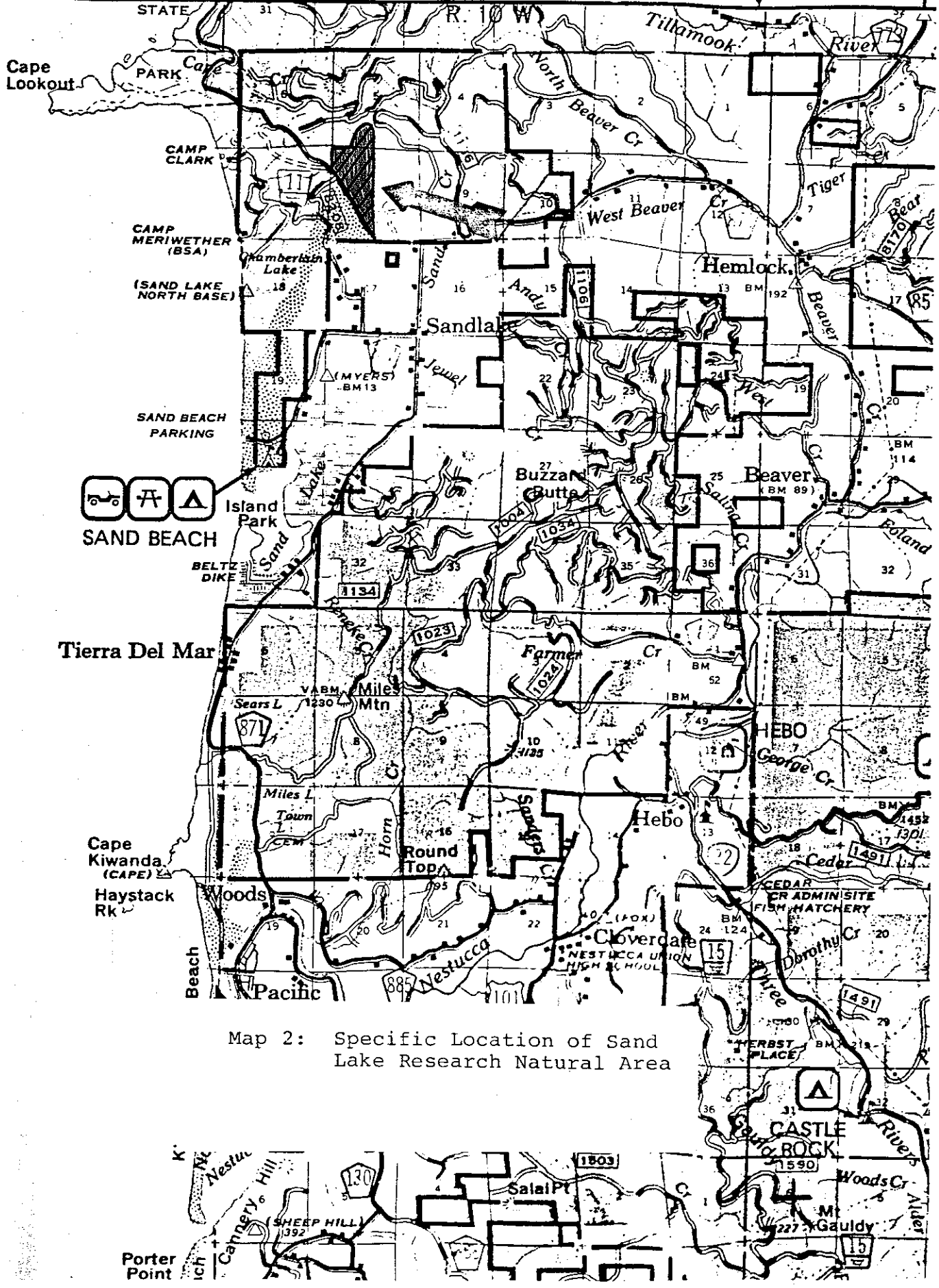


Map 1: General Location in Oregon
of Sand Lake Research
Natural Area

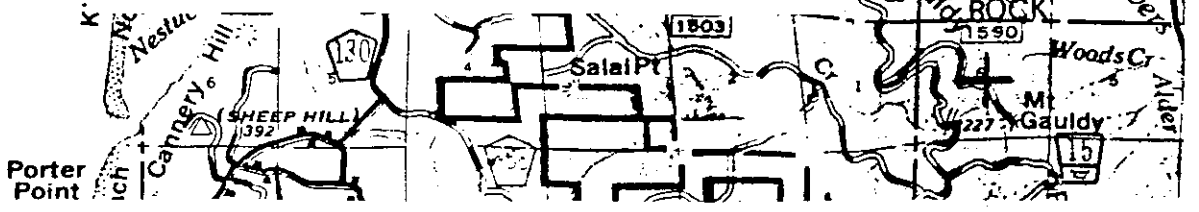
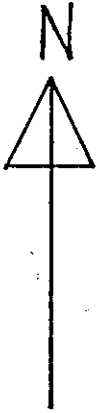
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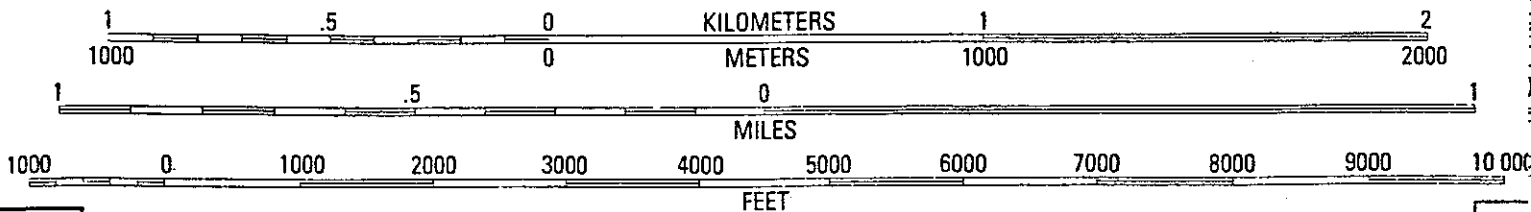
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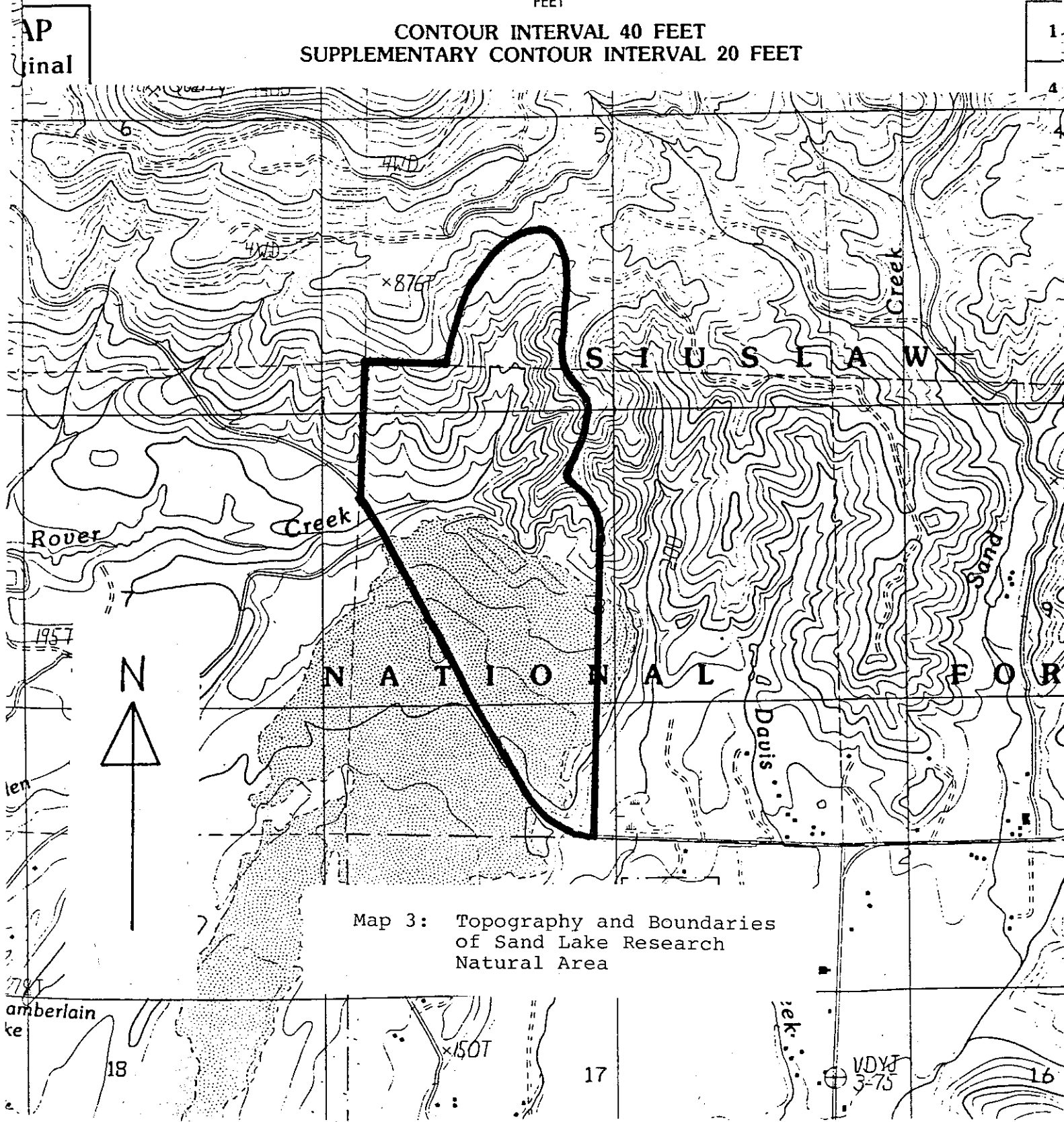
Map 2: Specific Location of Sand Lake Research Natural Area

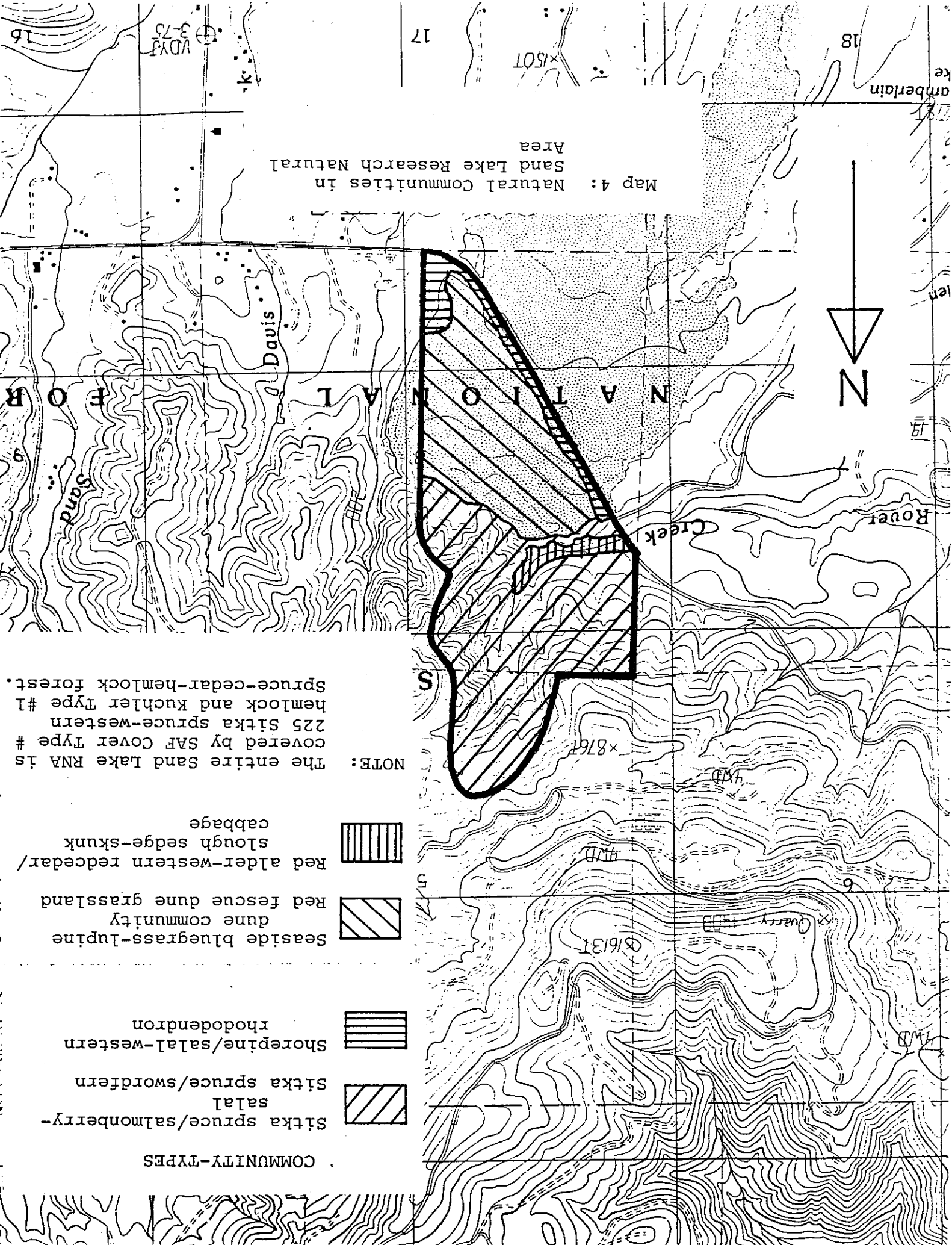


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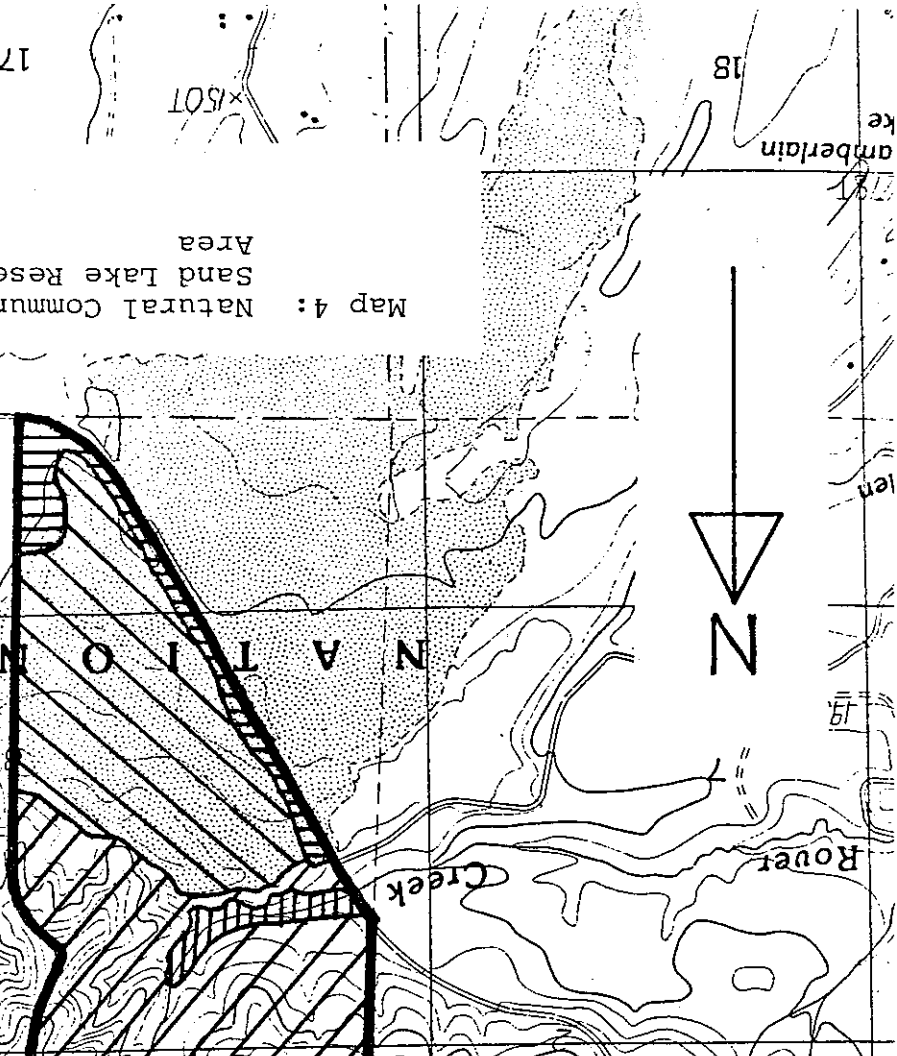
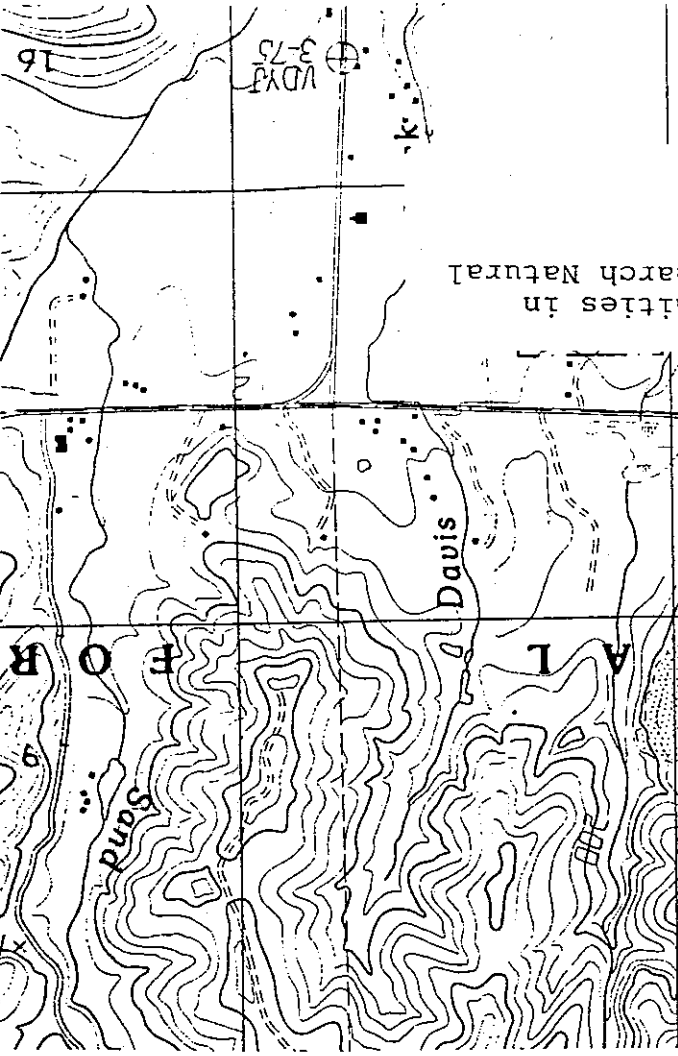
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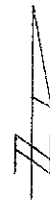
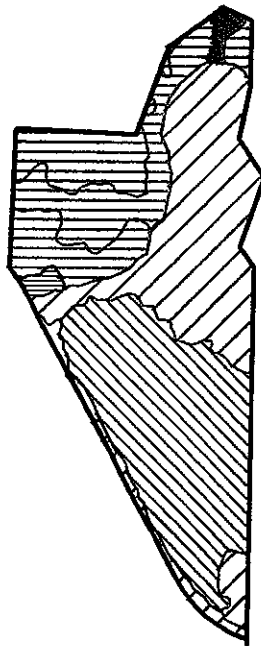


Map 4: Natural Communities in Sand Lake Research Natural Area






- COMMUNITY-TYPES
- Sitka spruce/salmonberry-salal
 - Sitka spruce/swordfern
 - Shorepine/salal-western rhododendron
 - Seaside bluegrass-lupine dune community
 - Red fescue dune grassland
 - Red alder-western redcedar/slough sedge-skunk cabbage
- NOTE: The entire Sand Lake RNA is covered by SAF Cover Type # 225 Sitka spruce-western hemlock and Kuchler Type #1 spruce-cedar-hemlock forest.



SAND LAKE RNA SOILS



Legend

-  Fine Sand (Heceta Series)
-  Fine Sand (Waldport series)
-  Fine Sand/Dunes complex (Waldport series)
-  Silt Loam (Salander Series)
-  Winema Silt