UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

DESIGNATION ORDER

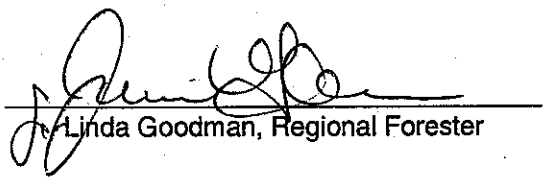
By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.42 and 36 CFR 251.23, this is my Designation Order to establish the Duck Lake Research Natural Area. The Duck Lake Research Natural Area shall be comprised of lands described in the section of the Establishment Record entitled "Location".

Regional Forester John Butruille recommended the establishment of the Duck Lake Research Natural Area in the Wallowa-Whitman National Forest Land and Resource Management Plan dated May 25, 1990 which is incorporated into this document by reference. That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. The results of the Regional Forester's analysis are documented in the Final Environmental Impact Statement for the Wallowa-Whitman National Forest Land and Resource Management Plan and the Establishment Record for the Duck Lake Research Natural Area which are available to the public.

The Duck Lake Research Natural Area will be managed in compliance with all relevant laws, regulations and Manual direction regarding Research Natural Areas. The Duck Lake Research Natural Area will be administered in accordance with the management direction identified in the Establishment Record. The Wallowa-Whitman National Forest Land and Resource Management Plan is hereby amended to be consistent with the management direction identified in the Establishment Record and this Designation Order. This direction will remain in effect unless amended pursuant to 36 CFR 219.10. This is a non-significant amendment of the Wallowa-Whitman National Forest Land and Resource Management Plan.

Based on the Environmental Analysis documented in the Wallowa-Whitman National Forest Land and Resource Management Plan, the Environmental Impact Statement, and the Establishment Record, I find that designation of the Duck Lake Research Natural Area is not a major Federal action significantly affecting the quality of the human environment.

The Forest Supervisor of the Wallowa-Whitman National Forest shall notify the public of this amendment and will mail a copy of the Designation Order and amended direction to all persons on the Wallowa-Whitman National Forest Land and Resource Management Plan mailing list.



Linda Goodman, Regional Forester

11/18/04
Date

SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Duck Lake Research Natural Area

Wallowa-Whitman National Forest

Wallowa 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 /s/ Michael P. Murray _____ Date 3/18/04
Michael P. Murray,
National Park Service

Recommended by Kendall Clark _____ Date 3/3/04
Kendall Clark, Area Ranger,
Hells Canyon National Recreation Area

Recommended by Karyn L. Wood _____ Date 3-8-04
Karyn Wood, Forest Supervisor,
Wallowa-Whitman National Forest

Concurrence of _____ Date 4-26-04
Thomas Quigley, Director,
Pacific Northwest Research Station

TITLE PAGE

Establishment Record for
Duck Lake Research Natural Area
within Wallowa-Whitman National Forest
Wallowa County, Oregon

ESTABLISHMENT RECORD FOR
DUCK LAKE RESEARCH NATURAL AREA
WITHIN WALLOWA-WHITMAN NATIONAL FOREST,
WALLOWA COUNTY, OREGON

INTRODUCTION

Duck Lake Research Natural Area (RNA) is a relatively natural and unmanipulated expanse of public land and waters administered by the Wallowa – Whitman National Forest. This RNA consists of a variety of terrestrial and aquatic ecosystems. There are numerous aquatic peatlands scattered throughout the RNA. This collection of montane fen and bog communities, known as a *mire*, is the best example known from the Blue or Wallowa Mountains. Fens, characterized by nearly pure stands of bladder sedge, are found at numerous sites within the RNA. Sphagnum moss, indicating bog communities, form floating mats along the margins of Duck Lake. The species-rich bog ecosystem supports significant amounts of common spikerush, buckbean, woolyfruit sedge, bladder sedge, and the insectivorous English sundew. Surrounding the wetlands are forest communities which are typical of the Blue and Wallowa Mountains. Grand fir occupies a variety of mesic habitats and dominates associated western larch, lodgepole pine, Douglas-fir, and Engelmann spruce. Understories are occupied by big huckleberry, baldhip rose, and Utah honeysuckle. On granitic soils, old-growth ponderosa pine thrives on bouldery bluffs near the center of the RNA. An open understory exhibits a ground cover of pine grass.

Duck Lake RNA is entirely within the Congressionally designated Hell's Canyon National Recreation Area. It receives moderate recreational use, mostly hunters and anglers.

Land Management Planning

Duck Lake RNA was proposed as a candidate RNA by the Wallowa-Whitman National Forest to include notable vegetation communities occurring in the Blue and Wallowa Mountains. It was included as a candidate RNA in the Final Environmental Impact Statement for the Wallowa-Whitman National Forest (USDA 1990a), in the Forest Plan (USDA 1990b), and in the Record of Decision (USDA 1990c).

Duck Lake RNA contains representative examples of the following ecosystems in the Blue Mountains Ecoregion:

TERRESTRIAL ECOSYSTEMS

- ρ Ponderosa pine/pinegrass
- ρ Douglas-fir / pinegrass
- ρ Grand fir / big huckleberry

AQUATIC ECOSYSTEMS

- ρ Montane permanent pond
- ρ Montane vernal pond

OBJECTIVE

The central objective of this RNA is to provide an area of relatively undisturbed natural vegetation for study and monitoring. This RNA will provide a reference for measuring long-term ecological changes. It will also serve as a baseline (control site) for determining effects of management based on comparisons with similar sites which have been, and continue to be modified by human use.

JUSTIFICATION

Duck Lake fulfills an RNA need for a sphagnum-dominated floating bog in the Blue Mountains. This RNA supports a network of upper montane peat wetlands which are rarely so numerous in such a small physiographic setting. These fens and bogs have also been identified as cell needs in the Blue Mountains (Oregon Natural Heritage Advisory Council 1998).

PRINCIPAL DISTINGUISHING FEATURES

1. **Montane Sphagnum Bogs:** Along the margins of Duck Lake occur mats of floating bog associations. The sphagnum moss (*Sphagnum* spp.) forms a mostly continuous cover. Associated vascular flora co-dominating much of the sphagnum bog includes bladder sedge (*Carex utriculata*), common spikerush (*Eleocharis palustris*), buckbean (Menyanthes trifoliata) and woolyfruit sedge (*Carex lasiocarpa*). The native insectivorous English sundew (*Drosera anglica*) also co-dominates. Other conspicuous species are hooded ladies'-tresses (*Spiranthes romanzoffiana*), cinquefoil (*Potentilla palustris*), mud sedge (*Carex limosa*), fewflower spikerush (*Eleocharis quinqueflora*), slender cottongrass (*Eriophorum gracile*), rough sedge (*Carex muricata*), and threeway sedge (*Dulichium arundinaceum*).

2. **Sedge Fens:** Both Duck Lake and nearby microbasins support sedge-dominated fens. Duck Lake's northern margin meets a tier extending about 650 feet (200 m) where surface water periodically floods the vegetation. Sphagnum moss is absent from most of this two-acre (0.8 ha) site. Bladder sedge is the dominant and tends to form monospecific stands. There is a separate and larger seven-acre (2.8 ha) fen located about 320 feet (100 m) to the west. It is also dominated by an association of nearly pure bladder sedge but also has large patches of tall mannagrass (*Glyceria elata*).

3. **Grand Fir / Big Huckleberry Forests:** Mixed forests surrounding the RNA's wetlands are composed primarily of grand fir (*Abies grandis*) with lesser amounts of western larch (*Larix occidentalis*), lodgepole pine (*Pinus contorta*), and Douglas-fir (*Pseudotsuga menziesii*). These forests have multi-aged structure. Big huckleberry (*Vaccinium membranaceum*) is the most common shrub with associated baldhip rose (*Rosa gymnocarpa*) and Utah honeysuckle (*Lonicera utahensis*). Common herbs are Columbia brome (*Bromus vulgaris*), woods strawberry (*Fragaria vesca*), sweet cicily (*Osmorhiza chilensis*), round-leaved violet (*Viola orbiculata*), and heartleaf arnica (*Arnica cordifolia*).

4. **Ponderosa Pine – Douglas-Fir Forests:** This forest type occurs conspicuously among the flanks of granite outcrops. Some trees are very old and support scars from past fires. The overstory is dominated by ponderosa pine (*Pinus ponderosa*) and Douglas-fir. The shrub layer is very open with occasional Scouler's willow (*Salix scouleriana*) and snowbrush (*Ceanothus velutinus*). The herbaceous layer consists of a nearly pure coverage of pine grass (*Calamagrostis rubescens*). Associated flora found in trace amounts includes sweet-cicily, yarrow (*Achillea millefolium*), Solomon's seal (*Smilacina racemosa*), western hawkweed (*Hieracium albertinum*), and Pacific coralroot (*Corallorhiza mertensiana*).

LOCATION

The RNA is located in the Hell's Canyon National Recreation Area of the Wallowa-Whitman National Forest. The center of the RNA is at approximately latitude 45° 05' 45" North and longitude 117° 00' 10" west. The 310 acre (134 ha) site is within sections 29, 30, 32, and Protracted Block 39, Township 5 South, Range 47 east of the Willamette Meridian, in Wallowa County, Oregon.

Area

Total area for the Duck Lake Research Natural Area is 310 acres (134 ha).

Boundary

Beginning at a point where Forest Road 6600-540 intersects Forest Trail 1875, southwest of Duck Lake, the True Point of Beginning; thence northeasterly along Forest Trail 1875 towards Duck Lake to a point where a ridge intersects Forest Trail 1875; thence southeasterly along ridge to a high point; thence through saddle and along ridge to a high point; thence descend ridge and along edge of a break to the south to a point 50 feet westerly and perpendicular to Forest Road 3980; thence northerly 50 feet westerly and parallel to Forest Road 3980 to a point 50 feet westerly and perpendicular to Forest Road 3980 and 50 feet westerly and perpendicular to Forest Road 3980-160; thence primarily northerly 50 feet westerly and parallel to Forest Road 3980-160 to a point 50 feet westerly and perpendicular to Forest Road 3980-160 near Duck Lake Campground; thence primarily northerly along an extension of the line 50 feet westerly and parallel to Forest Road 3980-160 to its intersection with the centerline of Forest Trail 1875; thence N 45° E to a point 50 feet westerly and perpendicular to Forest Road 3980; thence northerly 50 feet westerly and parallel to Forest Road 3980 to a point 50 feet westerly and perpendicular to Forest Road 3980 and on the top of a ridge; thence northwesterly along the ridge to a high point; thence continuing along ridge to a high point; thence continuing along ridge to a high point; thence westerly along ridge to a high point; thence descending along ridge to a high point; thence descending northerly beneath a prominent rock formation to a point on the south rim of the Imnaha River Canyon; thence primarily westerly along the south rim of the Imnaha River Canyon to a point which intersects the outlet of the most westerly of three high marshes lying southerly of the south rim of the Imnaha River Canyon; thence descending westerly along the outlet of the aforementioned high marsh to a point in a saddle; thence southwesterly through saddle to a point below and westerly of a prominent rock

formation; thence southerly along and below aforementioned rock formation to a point in an old skid road; thence westerly along skid road to its intersection with a more prominent skid road; thence southwesterly along the more prominent skid road to its intersection with Forest Road 6600-540; thence primarily southeasterly along Forest Road 6600-540 to its intersection with Forest Trail 1875, the True Point of Beginning.

Clarification of Intent: The intent of this legal description is to exclude the Duck Lake Campground and the access road to the campground, Forest Road 3980-160, from the Duck Lake Research Natural Area (Figure 1).

Elevation

This RNA supports a very gradual drop in elevation from southeast to northwest (Figure 2). At the northwest boundary, elevation is approximately 5200 feet (1581 m). The highest elevations in the RNA are the large rocky outcroppings near Duck Lake approaching 5600 feet (1702 m).

Access

Duck Lake RNA can be accessed from the towns of Joseph or Halfway (Figure 3). From the south, State Route 86 leads from Halfway, Oregon. Ten miles from Halfway, the Wallowa Mountain Loop Road (Forest Service #39) branches off towards the north. About 18 miles to the north is where Fish Lake Road (Forest Service #66) heads to the west for about five miles where a short spur road (Forest Service 160) leads to the Duck Lake Campground. This campground is on the southeast boundary of the RNA. An old road which is now a footpath (Forest Trail #1875) leads from the campground to Duck Lake and beyond, following near the RNA's southwestern boundary. Access from Joseph is also from the Wallowa Mountain Loop Road. It is about 38 miles from Joseph to Fish Lake Road.

Maps

The area included in this RNA corresponds with two USGS 7.5-minute topographic quadrangle maps (1:24,000 scale): Deadman Point, Oregon (provisional edition 1990) and Duck Creek, Oregon (provisional edition 1990). The Wallowa-Whitman National Forest Map (1998) illustrates the RNA's broader-scale (1:126,720 scale) context and local land ownership patterns.

Photos

Aerial photographs of the RNA are available in the Forest Supervisor's and District Ranger's offices.

AREA BY COVER TYPES

The following spatial calculations of vegetation types is based on the digital Wallowa-Whitman National Forest Service map (EVG) created within a geographic information system (GIS) framework. Estimates are also based on field reconnaissance performed by the Oregon Natural Heritage Program.

Vegetation within the RNA conforms to a formal regional classification developed by the Forest Service (Johnson and Simon 1987). Wetlands correspond to a separate regional classification (Crowe and Clausnitzer 1997). Altogether, the vegetation of this RNA corresponds with the National Vegetation Classification System at the floristic classification level of alliance (Reid and others 1999). Further classification is provided according to Kuchler's vegetation types (1966) and the Society of American Foresters classification (Eyre 1980) (Figure 4).

SAF Cover Types (Eyre 1980)			
Grand Fir: 213		243ac	98ha
Interior Ponderosa Pine forest cover type: 237 (In part)		51ac	13ha
Non-forest (wetland and aquatic)		35ac	14ha
Kuchler Types (Kuchler 1966)			
Grand fir-Douglas fir forest (Abies-Pseudotsuga), # 14 (In part)		243ac	98ha
Western Ponderosa Forest (Pinus), #11		51ac	21ha
Non-forest (wetland and aquatic)		35ac	14ha
Vegetation Alliances (Reid and others 1999)			
V.A.5.N.k.42	Bladder Sedge Seasonally Flooded Herbaceous Alliance	23ac	9ha
V.A.5.N.m.	Tall Mannagrass Fen Herbaceous Alliance	<1ac	<1ha
V.A.5.N.k.54	Woolly-fruit Sedge Seasonally Flooded Herbaceous Alliance	<1ac	<1ha
V.A.5.N.k.61	Common Spikerush Seasonally Flooded Herbaceous Alliance	<1ac	<1ha
I.A.8.N.c.18	Grand Fir Forest Alliance	225ac	91ha
II.A.4.N.a.35	Ponderosa Pine – Douglas-Fir Woodland Alliance	51ac	51ha
Aquatic			
V.C.2.N.a.23	Pondweed Permanently Flooded Herbaceous Alliance	<1ac	<1ha
V.C.2.N.a.9	Pondlily Permanently Flooded Temperate Herbaceous Alliance	<1ac	<1ha
	Total	**310ac**	**134ha**

PHYSICAL AND CLIMATIC CONDITIONS

Physical Conditions

With a range of 400 feet (122 m), the RNA exhibits very little change in elevation, which is unusual in this steep region. Instead, it is a modest bench which supports numerous small microbasins less than 24 acres (10 ha) in size. These pockets collect water and maintain wetlands. The RNA was significantly scoured by glaciers before their retreat about 10,000 years ago. This is evident by the smoothed granitic outcrops at the site. Glaciers also played a role in excavating depressions where aquatic communities now thrive.

Climatic Conditions

Most precipitation falls as snow during the winter with significant rains often falling during the spring as well. Summers are characterized by warm. sunny weather with afternoon and evening thunderstorms, especially during July and August, that may be accompanied by light rains. 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 (Figures 5a and 5b).

The recording NOAA weather station that most closely duplicates conditions in the RNA and contains complete yearly records is located in New Meadows, Idaho, 45 miles (72 km) to the southeast of the RNA. A weather station situated at Halfway, Oregon is closer to the RNA but its lower elevation does not give an accurate portrayal of weather conditions for the RNA. Climatic conditions at New Meadows should be a fair approximation with moderately less snowdepth / duration and higher summer temperatures than the RNA. The station receives an annual precipitation of 24.79 inches (62.97 cm) and the mean annual temperature is 41.1 °F (5.1 °C). Summer high temperatures regularly reach into the high 80's°F, while winter lows often dip into the 20's °F or lower. The monthly climatic data for New Meadows averaged over the past 30 years is graphed in Figures 5a and 5b (National Oceanographic and Atmospheric Administration 2001).

DESCRIPTION OF VALUES

Flora

The flora of this RNA is representative of terrestrial and aquatic communities which are native to the region. Because of different habitat parameters between the communities (e.g. slope, soil, aspect, moisture availability), many species are restricted to only one or two communities. No state or federal threatened, endangered, or sensitive species are known to occur within the RNA boundaries. The flora has not been exhaustively sampled, however, floristic surveys have been made by personnel of the Forest Service and Oregon Natural Heritage Program in preparation for RNA establishment. The Forest Service Area Ecologist has documented taxa within a survey plot, and a separate wetlands inventory documented additional flora (Crowe and Clausnitzer 1997). These four sources provide the list of flora below. Species nomenclature follows the USDA Plants Database which is available online at: http://plants.usda.gov/plants (USDA, NRCS 1999. The PLANTS database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. This database also includes non-vasculars).

The plant habitat types and corresponding series (Reid and others 1999) are as follows:

1 Mesic Mixed Forest
- Grand Fir Forest Alliance

2 Ponderosa Pine – Douglas-Fir Woodland
- Ponderosa Pine – Douglas-Fir Woodland Alliance

3 Lacustrine Wetland
- Bladder Sedge Seasonally Flooded Herbaceous Alliance
- Tall Mannagrass Fen Herbaceous Alliance
- Woolly-fruit Sedge Seasonally Flooded Herbaceous Alliance
- Common Spikerush Seasonally Flooded Herbaceous Alliance
- Pondweed Permanently Flooded Herbaceous Alliance

- Pondlily Permanently Flooded Temperate Herbaceous Alliance

Table 1. List of vascular and non-vascular species found in Duck Lake RNA. Habitat type numbers are 1. Mesic Mixed Forest; 2. Ponderosa Pine – Douglas Fir Woodland; and 3. Lacustrine Wetland

Scientific Name	Common Name	Habitat Type		
Trees				
Abies grandis	grand fir	1		
Acer glabrum	mountain maple	1		
Larix occidentalis	western larch	1		
Picea engelmannii	Engelmann spruce	1		
Pinus contorta	lodgepole pine	1	2	
Pinus ponderosa	ponderosa pine		2	
Populus balsamifera	black cottonwood	1		
Populus tremuloides	quaking aspen	1	2	
Pseudotsuga menziesii	Douglas-fir	1	2	
Shrubs				
Amelanchier alnifolia	western serviceberry	1	2	
Alnus incana	mountain alder	1	2	
Alnus viridis ssp. sinuata	thin-leaved alder	1		
Arctostaphylos uva-ursi	bearberry	1	2	
Chimaphila umbellata	prince's pine	1	2	
Clematis columbiana	rock clematis	1	2	
Cornus sericea	red-osier dogwood	1		
Lonicera involucrata	bearberry honeysuckle	1		
Lonicera utahensis	rocky mtn. honeysuckle	1		
Mahonia repens (Berberis repens)	Oregon-grape	1		
Prunus emarginata	bitter cherry		2	
Prunus virginiana	common chokecherry		2	
Rhamnus alnifolia	alderleaf buckthorn	1		
Ribes lacustre	prickly currant	1		
Ribes viscosissimum	sticky currant	1		
Rosa gymnocarpa	baldhip rose	1	2	
Rosa nutkana	bristly nootka rose		2	
Rosa woodsii	wood's rose		2	
Salix lucida var. caudata	pacific willow	1		
Salix scouleriana	Scouler's willow	1	2	
Sambucus nigra ssp. cerulea	blue elderberry	1	2	
Sorbus scopulina	mountain-ash	1	2	
Spiraea betulifolia	shiny leaf spiraea	1	2	
Vaccinium membranaceum	big huckleberry	1		
Vaccinium scoparium	dwarf huckleberry	1		
Forbs				
Achillea millefolium	common yarrow	1	2	
Aconitum columbianum	Columbia monkshood	1	2	

Actaea rubra	wild red baneberry	1		
Adenocaulon bicolor	pathfinder	1		
Agoseris aurantiaca	orange agoseris	1	2	
Arnica cordifolia	heartleaf arnica	1	2	
Allium fibrillum	fringed onion		2	
Anaphalis margaritacea	common pearly-everlasting		2	
Angelica arguta	sharptooth angelica	1		
Antennaria rosea	rosy pussy-toes		2	
Apocynum androsaemifolium	spreading dogbane		2	
Aquilegia formosa	red columbine	1	2	
Astragalus canadensis	Canada milkvetch		2	
Athyrium filix-femina	lady fern	1	2	
Botrychium multifidum	leathery grape fern	1		
Camassia quamash	common camas	1	2	
Chamerion angustifolium ssp. angustifolium				
(Epilobium angustifolium ssp. angustifolium)	fireweed	1	2	
Cheilanthes gracillima	lace lipfern		2	
Circaea alpina	enchanter's nightshade	1		
Cirsium arvense	Canada thistle	1	2	
Cirsium vulgare	bull thistle	1		
Clematis columbiana var. columbiana	Columbia clematis	1		
Clintonia uniflora	queen's cup	1		
Collinsia parviflora	small-flowered blue-eyed mary	1	2	
Corallorhiza mertensiana	coralroot	1		
Cryptantha affinis	quill cryptantha		2	
Cryptantha torreyana	Toray's cryptantha		2	
Cryptogramma acrostichoides	American rockbane		2	
Cystopteris fragilis	brittle bladder-fern		2	
Drosera anglica	English sundew			3
Epilobium ciliatum ssp. glandulosum	purple-leaved willowherb	1	2	
Epilobium halleanum	glandular willowherb	1		
Equisetum arvense	common horsetail	1		3
Erigeron peregrinus	subalpine daisy	1		
Erythronium grandiflorum	yellow fawn lily	1	2	
Eurybia conspicua (Aster conspicuus)	showy aster		2	
Fragaria vesca	woods strawberry	1	2	
Fragaria virginiana	blueleaf strawberry	1	2	
Galium aparine	goose-grass	1	2	
Galium bifolium	thinleaf bedstraw		2	
Galium boreale	northern bedstraw		2	
Galium trifidum	small bedstraw	1		
Galium triflorum	fragrant bedstraw		2	
Gayophytum diffusm	spreading groundsmoke		2	
Geum macrophyllum	large-leaved avens		2	
Goodyera oblongifolia	rattlesnake plantain	1		
Hackelia micrantha	jessica sticktight	1		

Heuchera cylindrica	roundleaved alumroot		2	
*Heuchera grossularifolia var. grossularifolia**	gooseberry-leaved alumroot	1		
Hieracium albiflorum	white-flowered hawkweed	1	2	
Hieracium cynoglossoides	houndstongue hawkweed		2	
Hieracium scouleri	scouler's woolyweed		2	
Hydrophyllum capitatum	waterleaf	1	2	
Hypericum anagalloides	tinker's penny	1	2	
Lathyrus pauciflorus	few-flowered peavine	1	2	
Listera caurina	western twayblade	1		
Lomatium dissectum	fern-leaved dissectum		2	
Lycopus asper	rough bugleweed			3
Madia glomerata	cluster tarweed		2	
Maianthemum stellatum	starry false solomon's seal	1		
Maianthemum racemosum	feathery false lily of the valley	1	2	
Medicago lupulina	black medick		2	
Mentha arvensis	wild mint	1		
Menyanthes trifoliata	buckbean			3
Mertensia ciliata	broad-leaved bluebells	1		
Microseris nutans	nodding mircroseris		2	
Mimulus breweri	brewer's monkeyflower	1		
Mimulus moschatus	musk monkeyflower	1		
Mimulus primuloides	primrose monkeyflower	1		
Moehringia macrophylla				
(Arenaria macrophylla)	largeleaf sandwort	1	2	
Moneses uniflora	single delight	1		
Montia perfoliata	miner's lettuce	1	2	
Nuphar lutea ssp. polysepala				
(Nuphar polysepalum)	yellow pond-lily			3
Orthilia secunda	sidebells wintergreen	1	2	
Osmorhiza chilensis	sweet cicily	1	2	
Packera cymbalarioides (Senecio cymbalarioides)	alpine meadow butterweed	1		
Packera pseudaurea				
(Senecio pseudaureus)	streambank butterweed	1		
Paeonia brownii	brown's peony		2	
Pedicularis groenlandica	pink elephant's head			3
Penstemon fruticosus	shrubby penstemon		2	
Penstemon globosus	globe penstemon	1	2	
Perideridia gairdneri	gairdner's yampah		2	
Piperia unalascensis	slender-spire orchid	1		
Plagiobothrys sp.	popcornflower		2	
Plantago major	common plantain			3
Polystichum scopulinum	mountain hollyfern	1		
Potentilla glandulosa ssp. glandulosa	sticky cinquefoil		2	
Potentilla gracilis var. elmeri	slender cinquefoil		2	
Potentilla palustris	-			3
Potomogeton natans	floating-leaved pondweed			3

Pteridium aquilinum var. pubescens	braken fern	1	2	
Pterospora andromedea	woodland pinedrops		2	
Pyrola asarifolia	pink wintergreen	1		
Ranunculus uncinatus var. parviflorus	little buttercup	1		
Rumex acetosella	sheep sorrel		2	
Scrophularia lanceolata	lanceleaf figwort		2	
Sedum stenopetalum	wormleaf stonecrop		2	
Selaginella densa	lessor spikemoss	1		
Sidalcea oregana	Oregon checker-mallow		2	
Sparganium minimum	small bur-reed			3
Symphyotrichum ascendens				
(Aster chilensis ssp. adscendens)	western aster		2	
Taraxacum officinale	dandelion	1	2	
Thalictrum occidentale	western meadowrue	1	2	
Trifolium repens	white clover	1		
Triteleia grandiflora	largeflower triteleia	1	2	
Typha latifolia	cattail			3
Valeriana sitchensis	sitka valerian	1		
Veratrum californicum	California cornlily	1		
Vicia americana	American vetch		2	
Viola adunca	early blue violet	1		
Viola glabella	woodland violet	1	2	
Viola orbiculata	round-leaved violet	1		
Grasses				
Achnatherum nelsonii ssp. dorei				
(Stipa nelsonii var. dorei)	nelson's needlegrass		2	
Alopecurus aequalis	shortawn foxtail			3
Agrostis scabra	rough bentgrass		2	
Agrostis stolonifera	creeping bentgrass			3
Bromus vulgaris	Columbia brome	1		
Calamagrostis canadensis	bluejoint reedgrass	1	2	
Calamagrostis rubescens	pinegrass	1	2	
Deschampsia caespitosa	tufted hairgrass			3
Elymus elymoides (Sitanion hystrix)	squirreltail		2	
Elymus glaucus ssp. glaucus	blue wildrye	1	2	
Festuca subulata	bearded fescue	1		
Glyceria elata	tall mannagrass			3
Melica subulata	Alaska oniongrass	1	2	
Muhlenbergia filiformis	slender muhly	1		
Torreyochloa pallida	false mannagrass			3
Trisetum spicatum	spike trisetum		2	
Grass-like plants				
Carex aperta	Colombian sedge			3
Carex aurea	golden sedge	1		3
*Carex buxbaumii**	buxbuam's sedge			3
Carex canescens	silvery sedge			3
Carex cusickii	cusick's sedge			3

Carex deweyana	dewey sedge			3
Carex echinata	star sedge			3
Carex hoodii	hood's sedge	1	2	
Carex lanuginosa	-			3
Carex lasiocarpa	woolyfruit sedge			3
Carex limosa	mud sedge			3
Carex luzulina	pale sedge			3
Carex microptera	small-winged sedge	1		
Carex utriculata	bladder sedge			3
Carex vesicaria	inflated sedge			3
Dulichium arundinaceum	threeway sedge			3
Eleocharis acicularis	needlerush spikerush			3
Eleocharis palustris	common spikerush			3
Eleocharis quinqueflora				
(Eleocharis pauciflora)	few-flowered spikerush			3
Eriophorum viridicarinatum	thinleaf cottonsedge			3
Juncus ensifolius	swordleaf rush			3
Juncus nevadensis	sierra rush			3
Luzula campestris	field woodrush	1		
Schoenoplectus acutus				
(Scirpus acutus)	hard-stemmed bulrush			3
Macrolichens				
Bryoria fuscescens	horsehair lichen			
Bryoria pseudofuscescens	horsehair lichen			
Cetraria chlorophylla	-			
Cetraria merrillii	-			
Cetraria platyphylla	-			
Cladonia carneola	cup lichen			
Cladonia coniocraea	cup lichen			
Cladonia fimbriata	cup lichen			
Cladonia pyxidata	cup lichen			
Cladonia sp.	cup lichen			
Dermatocarpon reticulatum	reticulate silverskin lichen			
Hypogymnia imshaugii	imshaug's tube lichen			
Hypogymnia physodes	tube lichen			
Hypogymnia rugosa	tube lichen			
Letharia columbiana	wolf lichen			
Letharia vulpina	wolf lichen			
Melanelia exasperatula	-			
Melanelia subolivacea	-			
Nodobryoria abbreviata	-			
Nodobryoria oregana	-			
Peltigera elisabethae	Elizabeth's felt lichen			
Peltigera praetextata	Felt lichen			
Peltigera venosa	Felt lichen			
Rhizoplaca melanophthalma	Rimmed navel liche			
Usnea lapponica	Lapland beard lichen			
Liverworts				

Lophozia incisa	-
Lophozia sp.	-
Porella cordeana	-
Scapania americana	-
Mosses	
Antitrichia californica	california antitrichia moss
Aulacomnium androgynum	aulacomnium moss
Aulacomnium palustre	aulacomnium moss
Bryum sp.	bryum moss
Buxbaumia piperi	piper's buxbaumia moss
Buxbaumia viridis	buxbaumia moss
Dicranoweisia crispula	dicranoweisia moss
Dicranum tauricum	dicranum moss
Warnstorfia fluitans var. fluitans	warnstorfia moss
Drepanocladus uncinatus	-
Grimmia sp.	dry rock moss
Homalothecium nevadense	nevada homalothecium moss
Orthotrichum sp.	orthotrichum moss
Philonotis fontana	philonotis moss
Plagiomnium insigne	plagiomnium moss
Polytrichum juniperinum	juniper polytrichum moss
Roellia roellii	roell's moss
Schistidium sp.	schistidium moss
Sphagnum sp.	sphagnum moss
Tortula ruralis	tortula moss

Fauna

The wildlife complex associated with the proposed Duck Lake RNA is a reflection of the uniqueness of the nearly closed drainage basin of the complex, its elevation (>5200 feet), and the surrounding coniferous forest. Duck Lake itself probably never had fish until brook trout and rainbow trout were introduced around 1940. Fish introduction has led to increased use by recreationists. The small campground and hunting use are also responsible for altering wildlife presence and use in the RNA.

There are no known federally listed endangered or threatened species using the RNA. However, the Columbia spotted frog is a candidate for federal listing. The American prairie falcon is listed by the state of Oregon as endangered, while the three-toed woodpecker is a "species of concern" (Oregon Natural Heritage Program 2001). A species of particular significance is Barrow's goldeneye which nests here. Broods have been recorded in the RNA and represent the only known location in Oregon. As a result it is on the state "watch list." Spotted frog, a regionally sensitive species, is present and breeds successfully in the numerous aquatic sites. Breeding Vaux's swifts, spruce grouse, and pine marten make this a unique complex of wildlife in relatively pristine condition. The vicinity of the RNA is designated "core lynx habitat" and probably is used by Pacific fishers. The presence of a full compliment of signatory ponderosa pine forest associates including white-headed woodpecker, white-breasted nuthatches, brown creepers, and probably flammulated owls is an intriguing inclusion in otherwise mesic forest habitats.

Table 2. List of amphibians, reptiles, birds and mammals thought to inhabit Duck Lake RNA

Scientific Name	Common Name
Amphibians	
Bufo boreas	Western toad
Pseudacris regilla	Pacific chorus frog
Ascaphis truei	Tailed frog
Rana pretiosa	Spotted frog
Rana luteiventris	Columbia spotted frog
Reptiles	
Charina bottae	Rubber boa
Thamnophis sirtalis	Common garter snake
Thamnophis elegans	Western terrestrial garter snake
Crotalis viridis	Western pacific rattlesnake
Birds	
Gavia immer	Common loon
Cygnus columbianus	Tundra swan
Cygnus buccinator	Trumpeter swan
Branta canadensis	Canada goose
Anas platyrhynchos	Mallard
Anas acuta	Northern pintail
Anas crecca	Green-winged teal
Anas discors	Blue-winged teal
Aix sponsa	Wood Duck
Bucephala clangula	Common goldeneye
Bucephala islandica	Barrow's goldeneye
Bucephala albeola	Bufflehead
Lophodytes cucullatus	Hooded merganser
Mergus merganser	Common merganser
Cathartes aura	Turkey vulture
Accipiter gentilis	Northern goshawk
Accipiter striatus	Sharp-shinned hawk
Accipiter cooperi	Coopers' hawk
Buteo jamaicensis	Red-tailed hawk
Buteo regalis	Ferruginous hawk
Aquila chrysaetos	Golden eagle
Haliaetus leucocephalus	Bald eagle
Circus cyaneus	Northern harrier
Pandion haliaetus	Osprey
Falco mexicanus	Prairie falcon
Falco peregrinus anatum	American peregrine falcon
Falco columbarius	Merlin
Falco sparverius	American kestrel
Dendragopus obscurus	Blue grouse
Dendragopus canadensis	Spruce grouse
Bonasa umbellus	Ruffed grouse
Grus canadensis tabida	Greater sandhill crane
Rallus limicola	Virginai rail
Porzana Carolina	Sora

Fulica americana	American coot
Charadrius vociferous	Killdeer
Gallinago gallinago	Common snipe
Actitus macularia	Spotted sandpiper
Tringa solitaria	Solitary sandpiper
Tringa melanoleuca	Greater yellowlegs
Tringa flavipes	Lesser yellowlegs
Catatrophorus semipalmatus	Willet
Calidris melanota	Pectoral sandpiper
Calidris bairdii	Baird's sandpiper
Calidris minutilla	Least sandpiper
Calidris mauri	Western sandpiper
Limnodromus scolopaceus	Long-billed dowitcher
Recurvirostra Americana	American avocet
Phalaropus tricolor	Wilson's phalarope
Phalaropus lobatus	Red-necked phalarope
Larus californicus	California gull
Sterna forsteri	Forester's tern
Sterna caspia	Caspian tern
Chlidonias niger	Black tern
Columbia fasciata	Band-tailed pigeon
Otus flameolus	Flammulated owl
Bubo virginianus	Great horned owl
Glaucidium gnoma	Northern pygmy owl
Strix varia	Barred owl
Strix nebulosa	Great gray owl
Asio otus	Long-eared owl
Asio flammeus	Short-eared owl
Aegolius funereus	Boreal owl
Aegolius acadicus	Northern saw-whet owl
Chordeiles minor	Common nighthawk
Chaetura vauxi	Vaux's swift
Archilochus alexandri	Black-chinned hummingbird
Selasphorus rufus	Rufous hummingbird
Stellula calliope	Calliope hummingbird
Ceryle alccyon	Belted kingfisher
Colaptes auritus	Common flicker
Dryocopus pileatus	Pileated woodpecker
Melanerpes lewis	Lewis woodpecker
Sphyrapicus thyroideus	Williamson's sapsucker
Sphyrapicus nuchalis	Red-na;ped sapsucker
Picoides villosus	Hairy woodpecker
Picoides albolarvatus	White-headed woodpecker
Picoides arcticus	Black-backed woodpecker
Picoides tridactylus	Three-toed woodpecker
Empidonax traili	Willow flycatcher
Empidonax hammondii	Hammond's flycatcher
Empidonax occidentalis	Cordilleran flycatcher
Contopus sordidulus	Western wood peewee
Contopus borealis	Olive-sided flycatcher
Tachycineta thalassina	Violet green swallow
Tachycineta bicolor	Tree swallow
Perisoreus canadensis	Gray jay

Cyanocitta stelleri	Steller's jay
Pica pica	Black-billed magpie
Corvus corax	Common raven
Nucifraga columbiana	Clark's nutcracker
Parus gambeli	Mountain chickadee
Sitta carolinensis	White-breasted nuthatch
Sitta canadensis	Red-breasted nuthatch
Sitta pygmae	Pygmy nuthatch
Certhia americana	Brown creeper
Cinclus mexicanus	American dipper
Troglodytes aedon	House wren
Troglodytes troglodytes	Winter wren
Salpinctes obsoletus	Rock wren
Turdus migratorius	American robin
Ixoreus naevius	Varied thrush
Catharus ustulatus	Swainson's thrush
Catharus guttatus	Hermit thrush
Sialia mexicana	Western bluebird
Sialia currucoides	Mountain bluebird
Regulus satrapa	Golden-crowned kinglet
Regulus calendula	Ruby-crowned kinglet
Anthus spinoletta	American pipit
Vireo cassinii	Cassins' vireo
Vireo gilvus	Warbling vireo
Vermivora celata	Orange-crowned warbler
Vermivora ruficapilla	Nashville warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica townsendii	Townsend's warbler
Oporornis tolmiei	MacGillivrays warbler
Wilsonia pusilla	Wilson's warbler
Ageliaius phoeniceus	Red-winged blackbird
Icturus galbula	Northern oriole
Euphagus cynocephalus	Brewer's blackbird
Molothrus ater	Brown-headed cowbird
Piranga ludoviciana	Western tanager
Pheucticus melanocephalus	Black-headed grosbeak
Coccothraustes verspertina	Evening grosbeak
Carpodacus cassinii	Cassin's finch
Pinicola enucleator	Pine grosbeak
Carduelis pinus	Pine siskin
Loxia curvirostra	Red Crossbill
Loxia leucoptera	White-winged crossbill
Piplio erythrophthalmus	Spotted towhee
Junco hyemalis	Dark-eyed junco
Spizella passerina	Chipping sparrow
Zonotrichia leucophrys	White-crowned sparrow
Passerella iliaca	Fox sparrow
Melospiza lincolnii	Lincoln's sparrow
Mammals	
Sorex monticolus	Montane shrew
Sorex vagrans	Vagrant shrew
Sorex palustris	Northern water shrew

Myotis evotis	Long-eared myotis
Myotis volans	Long-legged myotis
Lasionycterious noctivagans	Silver-haired bat
Eptesicus fuscus	Big brown bat
Lasiurus cinereous	Hoary bat
Corynorhinus townsendii	Townsend's big-eared bat
Lepus americanus	Snowshoe hare
Eutamius amoenus	Yellow-pine chipmiunk
Spermophilus columbianus	Columbian ground squirrel
Spermophilus lateralis	Mantled ground squirrel
Tamiasciurus hudsonicus	Red squirrel
Glaucomys sabrinus	Northern flying squirrel
Thomomys talpoides	Northern pocket gopher
Castor canadensis	Beaver
Peromyscus maniculatus	Deer mouse
Neotoma cinerea	Bushy-tailed woodrat
Clethrionomys gapperi	Gapper red-backed vole
Phenacomys intermedius	Heather vole
Microtus montanus	Montain vole
Microtus richardsoni	Water vole
Erethizon dorsatum	Porcupine
Canis latrans	Coyote
Canis lupus	Gray wolf
Vulpes fulva	Red fox
Ursus americanus	Black bear
Procyon lotor	Raccoon
Martes americana	Pine marten
Martes pennanti pacifica	Pacific fisher
Mustella erminea	Short-tailed weasel
Mustella vison	Mink
Gulo gulo	Wolverine
Lutra canadensis	River otter
Felis concolor	Mountain lion
Felis lynx canadensis	North American lynx
Lynx rufus	Bobcat
Cervus elaphus nelsonii	Rocky Mountain elk
Odocoileus hemionus	Mule deer
Odocoileus virginianus idahoensis	Idaho white-tailed deer
Alces alces	Moose
Ovis canadensis canadensis	Rocky Mountain bighorn sheep

Geology

No formal investigation of the RNA's geology has been undertaken. Parent material is derived from marine sedimentary, volcanic, and metavolcanic rocks. These sources are from the Mesozoic Era, specifically, the Upper Triassic along with the Upper and Middle Jurassic Periods. Granite is evident near the center of the RNA as glacially scoured bluffs above Duck Lake.

Soils

No surveys or mapping of the RNA's soil resources have been performed. Based on soils underlying similar sites in the region, the grand fir forests are likely underlain by

deep silt loams comprised of a thick mantle of (Mazama) volcanic ash over loess and buried basalt residual. Soils associated with ponderosa pine are well-drained granitics. Underlying the wetlands are deep lacustrine deposits. This muck probably approximates 5 meters in thickness. Associated with lacustrine soils are peripheral peatlands which are composed of waterlogged organics.

Lands

Duck Lake RNA is surrounded by federal land managed by the Wallowa-Whitman National Forest, Hell's Canyon National Recreation Area. This land is classified as Management Area 11 in the Forest Plan (USDA 1990b). As such, dispersed recreational use is emphasized. Timber harvesting occurs but is limited to selective cutting operations. Livestock grazing also occurs immediately adjacent to the RNA.

Cultural Resources

There are no documented cultural resources within the Duck Lake RNA. A cultural resource inventory has not been conducted in the RNA.

IMPACTS AND POSSIBLE CONFLICTS

Mineral Resources

The RNA has not been formerly surveyed for mineral resources. As such, there are no documented minerals of any significant value. Under Hells Canyon National Recreation Area Act (Public Law 94-199, Section 11), all federal lands located within the recreation area are withdrawn from mineral entry.

Grazing

The RNA is located in the Mud-Duck Allotment which is currently vacant. However, a permitted allotment (Pine Valley) nearby has facilitated the occasional incursion of cattle along the RNA's southernmost portion. While no significant damage to soil or aquatic resources has occurred, grazing trespass threatens the introduction of non-native plants which could compromise the integrity of the RNA. If cattle are not managed to avoid the RNA, it may be necessary to install a protective fence.

Timber

Because Duck Lake was identified in the forest planning process (USDA 1990a, 1990b) as a Research Natural Area, its designation causes no withdrawal from the timber producing base. It supports 294 acres (119 hectares) of mostly merchantable timber.

Watershed Values

Although the RNA is relatively small in size, it exists at a headwater location of two major basins. This is because the RNA rests on a modest bench along a ridgetop separating the Lower Snake River drainage from the Middle Snake River drainage. This bench forms a small basin of wetlands from which no perennial streams emanate. The northern portion of the RNA is within the Imnaha River watershed (Lower Snake drainage). The southern half is situated in the Middle Fork Snake River (drainage) watershed. Because the wetlands receive very little surface water input, they are excellent sources for studying potential dynamics of air pollution via precipitation inputs.

Recreation Values

The RNA receives moderate recreational use. A primitive campground with several campsites enables motorized access to the RNA's boundary. A short trail leads to Duck Lake where people enjoy swimming, floating, and angling. During the late summer and fall, hunters use the campground.

A permanent cessation of fish stocking will not significantly reduce the numbers of fish if they are self-reproducing. However, if Duck Lake is actively restored through the removal of reproducing fish, there will be a marked decrease in lakeside use due to no angling.

Wildlife and Plant Values

There are no federally listed endangered or threatened species known to use the RNA. However, many rare animal species are present (see Fauna section). The establishment of this RNA is not expected to negatively impact any of these species.

Special Management Area Values

The RNA occurs with the Hells Canyon National Recreation Area which was established in 1975. Management for the Hells Canyon National Recreation Area is addressed in the Land and Resource Management Plan for the Wallowa-Whitman National Forest (USDA 1990b). Standards and guidelines for the overlying National Recreation Area are detailed in Management Areas 8, 9, 10, and 11. Resource element standards are prescribed in the plan to protect outstandingly remarkable values. Establishment and management of the RNA would not degrade these values nor would it conflict with the standards detailed in the Forest Plan.

MANAGEMENT PRESCRIPTION

Management of the Duck Lake RNA will be directed towards maintaining natural ecological processes and conditions. Therefore, human activities that disturb or modify conditions, as well as interfere with natural processes, would be minimized.

This RNA is included, along with other RNAs, in the Wallowa-Whitman National Forest Plan's Management Area 12 designation for all Research Natural Areas (USDA 1990b). Fundamental standards and guidelines for management are outlined in the Forest Plan.

Vegetation Management

Standards and guidelines for RNAs, Management Area 12, 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. No scheduled timber harvest will occur in the natural area and firewood cutting will be prohibited. Hazard trees may be removed to protect campground users.

Lightning-ignited fires will be allowed to burn in the RNA when they comply with the management prescriptions set for such fires, and if the fire meets RNA management goals. Prescribed management-ignited fires will be used only in conjunction with approved research projects or when needed to meet RNA management goals for vegetation, natural communities and wildlife habitat. Fire suppression will use methods and equipment that will minimize site disturbance to the special features of the area.

The decision to treat insect and disease outbreaks will be made on a case-by-case basis with non-native organisms being of highest priority. Where control activities are prescribed, they shall be as specific as possible and induce minimal impact to other components of the ecosystem.

Recent impacts to the bog at Duck Lake are incompatible with maintaining natural conditions with the RNA. Artificial structures have been installed by recreationists on the surface of the bog. These consist of landings contracted with plywood and wooden cable-spool ends which are trampling the fragile vegetation. The likelihood of additional artificial structures being constructed is a significant risk due to motorized access to the campground adjacent to the RNA. Foot trampling of the bog is also evidenced by the existence of several paths.

Aquatic Management

Fish are not native components of the RNA. The resident brook trout and rainbow trout in Duck Lake were probably introduced in the 1940s. The predatory behavior of fish can result in declines and extirpations of a diverse array of native species. High-elevation organisms affected by these trout include zooplankton, benthic invertebrates, and amphibians. There are many documented cases of these prey organisms being completely eliminated in lakes after fish were introduced. Therefore, Duck Lake's utility as a baseline of natural conditions is greatly compromised by the continued presence of these fish populations. As such, stocking of the RNA's aquatic resources should be discontinued. This presents the opportunity for studying restoration and recovery of Duck Lake's aquatic community.

Transportation Plan

Within the RNA an old jeep trail exists along its southern boundary. This old road does not present a threat to RNA resources and actually may attract foot traffic away from sensitive lakeside vegetation and waterfowl.

Fences and Protective Barrier

Fencing for livestock does not exist along the boundaries of the RNA. Livestock use exists near the RNA boundary.

ADMINISTRATION RECORDS AND PROTECTION

Administration and protection of Duck Lake RNA will be the responsibility of the Wallowa-Whitman National Forest. The Area Ranger, Hell's Canyon NRA, has direct responsibility for management of the RNA.

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 Area 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 Duck Lake RNA will be maintained in the following offices:

Forest Supervisor, Wallowa-Whitman National Forest, Baker City, Oregon

Area Ranger, Hells Canyon NRA, Enterprise, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon
Forest Sciences Laboratory, 3200 Jefferson Way, Corvallis, Oregon

Archiving

The Portland office of the Pacific Northwest Research Station will be responsible for maintaining the Duck Lake RNA research data file and list of herbarium and species samples collected.

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DUCK LAKE RESEARCH NATURAL AREA

ENVIRONMENTAL ASSESSMENT

Hells Canyon National Recreation Area
Wallowa-Whitman National Forest

Purpose and Need for Action

Research Natural Areas (RNA) are designated for research and educational opportunities, to maintain biological diversity on National Forest land, and are selected to complete a national network of ecological areas. Establishment of research natural areas has been sanctioned in the Code of Federal Regulations in Section 7 CFR 2.42, 36 CFR 251.23, and 36 DFR 219.25. Direction for establishment is provided in Forest Service Manual 4063 and in "A Guide for Developing Natural Area Management and Monitoring Plans" written by the Pacific Northwest Interagency Natural Area Committee. As stated in this guide, each RNA is designated based on three major objectives: 1) To preserve examples of all significant natural ecosystems for comparison with those areas influenced by humans; 2) to provide educational and research areas for ecological and environmental studies and monitoring; and 3) to preserve gene pools for typical and rare and endangered plants and animals.

Duck Lake was originally proposed for RNA designation by the Wallowa-Whitman National Forest, USDA, in (1990), with an establishment report prepared in 2002. The Duck Lake area still maintains all the qualities unique for RNA designation. The proposed area would contribute to the national network of RNA's by providing an example of mires. Duck Lake Research Natural Area (RNA) is a relatively natural and unmanipulated expanse of public land and waters administered by the Wallowa-Whitman National Forest. The mire primarily fulfills a RNA need for a sphagnum-dominated floating bog in the Blue Mountains. Duck Lake mire supports a network of upper montane peat wetlands which are rarely so numerous in such a small physiographic setting. This mire has also been identified as a cell need in the Blue Mountains (Oregon Natural Heritage Advisory Council 1998). The RNA contains representative examples of the following ecosystems in the Blue Mountains Ecoregion:

TERRESTRIAL ECOSYSTEMS

- Old-growth Ponderosa pine
- Douglas-fir/pinegrass
- Grand fir/Big huckleberry

AQUATIC ECOSYSTEMS

- Montane permanent pond
- Montane vernal pond

The Duck Lake RNA would preserve one example of a unique natural ecosystem, would preserve gene pools for this community type, and provide an educational and research area for the study of the unique ecosystems. (Establishment Record, Justification, page 2)

The following elements make the RNA of unique value: (Establishment Record, Description of Values, pages 2-3)

1. Montane Sphagnum Bogs-There are numerous aquatic peatlands scattered throughout the RNA. Sphagnum moss, indicating bog communities, form floating mats along the margins of Duck Lake The species-rich bog ecosystem supports significant amounts of common spikerush, buckbean, woolyfruit sedge, and the insectivorous English sundew This collection of montane fen and bog communities, known as a *mire*, is the best example known from the Blue Mountains.
2. Sedge Fens, characterized by nearly pure stands of bladder sedge, are found at numerous sites within the RNA.
3. Grand Fir/Big Huckleberry Forest communities are typical of the Blue Mountains and surround the wetlands. Grand fir occupies a variety of mesic habitats and dominates associated western larch, lodgepole pine, Douglas-fir, and Engelmann spruce. Understories are occupied by big huckleberry, baldhip rose, and Utah honeysuckle.
4. Old-growth ponderosa pine-Douglas fir forests thrive on granitic soils amongst bouldery bluffs near the center of the RNA. Some trees are very old and support scars from past fires.

There are no known significant mineral resources within the RNA. Timber harvest on the RNA will not occur unless for research purposes. Because Duck Lake was identified in the forest planning process as a Research Natural Area, its designation causes no withdrawal from the timber producing base. The RNA has no active grazing allotments. A permitted allotment nearby has facilitated the occasional incursion of cattle along the RNA's southernmost portion. If cattle are not managed to avoid the RNA, it will be necessary to install a protective fence. Recreation use is moderate, consisting of swimming, floating, angling, and in the fall, hunting. A primitive campground with several campsites enables motorized access to the RNA's boundary. A short trail leads from the campground to Duck Lake. Because recreation is significantly impacting the RNA the campground should be relocated to an alternative, less environmentally sensitive site in the area where day users will not access the RNA. Management of the RNA will be directed towards maintaining natural ecological processes and conditions. Therefore, human activities that disturb or modify conditions, as well as interfere with natural processes, shall be prohibited. With the exception of the trail accessing Duck Lake from the campground there are no system roads or trails, nor a need for system roads or trails in the RNA. Environmental effects as disclosed in the forest final environmental impact statement (EIS) for the Forest Land and Resource Management Plan [LRMP} are still valid (FEIS, pages IV-61, 78, and 85]. There are no threatened or endangered species known to the use the area. (Establishment Records, Impacts, pages 21-22)

Proposed Action

The proposed action is to establish a 310 acre parcel on National Forest System land as the Duck Lake Research Natural Area. This parcel was proposed for establishment as an RNA in the April 1990 Wallowa-Whitman National Forest and Resource Management Plan (Forest Plan). Once established, a management plan would be developed for the Duck Lake RNA to maintain or enhance the plant communities represented within this area. The proposed action and formal designation of the RNA by the Regional Forester will amend the Forest Plan.

Alternatives and Effects of Implementation

Alternative A, Proposed Action (Establishment Record, Location, pages 3-4)

This alternative will designate in perpetuity 310 acres of National Forest land as the Duck Lake Research Natural Area. The location of the proposed area is on the Wallowa-Whitman National Forest, approximately 48 miles southeast of Enterprise, Oregon in Township 5 South, Range 47 East, Sections 29, 30, 32, and Protracted Block 39, Willamette Meridian. Once established, a management plan specific to the Duck Lake area will be written. Interim management of the area will be followed as outlined in the Forest Plan, pages 4-84 and 4-85. The objective is to maintain the natural condition of the area. No forest products or minerals will be removed, livestock grazing patterns will not be changed, fire activity will be limited, off road vehicles will be excluded, and recreation use will be managed at a low intensity level. Environment consequences disclosed in the Forest Plan Final Environmental Impact Statement are still valid, and conditions and effects have not changed.

The effects of establishing the Duck Lake RNA are described in the Forest Plan, Pages 4-84 and 4-85. Management strategies will change under the establishment, however no adverse or irreversible environmental consequences are expected. (Establishment Record, Impacts and Possible Conflicts, pages 18-19)

Alternative B, No Action

Under this alternative, the Duck Lake area proposed for RNA status would remain as a proposed RNA and continue to be protected from uses which would reduce its suitability for RNA designation. This management direction is listed in the Forest Plan, Pages 4-84 and 4-85, and will remain in effect until there is a new Forest Plan or there is an amendment to the portion of the Forest Plan.

Consultation with Others

This proposed action was identified in a June 27, 2002 scoping letter with opportunity for public comment. No comments on the proposal were received. Notification of this proposed action was also published in the Wallowa Mountains Office Schedule of Proposed Actions starting with the spring 2002 edition.

DECISION NOTICE/DESIGNATION ORDER

FINDING OF NO SIGNIFICANT IMPACT

For

Duck LakeResearch Natural Area

(Forest Plan Amendment No.31)

Wallowa-Whitman National Forest
Hells Canyon National Recreation Area
Wallowa County, Oregon

Introduction

Research natural areas (RNA's) are designated for research and educational opportunities, to maintain biological diversity on Nation Forest System lands, and are selected to complete a national network of ecological areas.

Each RNA is designated based on three major objectives: (1) to preserve examples of all significant natural ecosystems for comparison with those areas influenced by humans; (2) to provide educational and research areas for ecological and environmental studies and monitoring; and (3) to preserve gene pools for typical and rare and endangered plants and animals.

Duck Lakewas originally proposed for RNA designation by the Wallowa-Whitman National Forest. The Duck Lake area still maintains all the qualities unique for RNA designation. The proposed area would contribute to the national network of RNA's by providing an example of mires. Duck Lake Research Natural Area (RNA) is a relatively natural and unmanipulated expanse of public land and waters administered by the Wallowa-Whitman National Forest. The mire primarily fulfills a RNA need for a sphagnum-dominated floating bog in the Blue Mountains. Duck Lake supports a network of upper montane peat wetlands which are rarely so numerous in such a small physiographic setting. This mire has also been identified as a cell need in the Blue Mountains (Oregon Natural Heritage Advisory Council 1998). The RNA contains representative examples of the following ecosystems in the Blue Mountains Ecoregion:

TERRESTRIAL ECOSYSTEMS

- Old-growth Ponderosa pine
- Douglas-fir/pinegrass
- Grand fir/Big huckleberry

AQUATIC ECOSYSTEMS

- Montane permanent pond
- Montane vernal pond

The Duck Lake RNA would preserve one example of an unique natural ecosystem, would preserve gene pools for this community type, and provide an educational and research area for the study of the unique ecosystems.

Decision

By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.42 and 36 CFR 251.23, I hereby select Alternative A and establish, as surveyed, the 310 acre (134 hectare) Duck

Lake RNA. [See Establishment Record entitled "location", pages 3-4]. The Forest Plan is hereby amended to change the Duck Lake RNA from a "proposed" RNA to an "established" RNA. This is a non-significant amendment of the 1990 Wallowa-Whitman National Forest Land and Resource Management Plan (Forest Plan). This RNA is approximately 48 miles southeast of Enterprise, Oregon [Township 5 South, Range 47 East, Sections 29, 30 and 32, Willamette Meridian], in Wallowa County. [See Maps 1 and 2]

This is a non-significant amendment to the Forest Plan [36 CFR 219.10(f)]. The area affected is small in proportion to the forest as a whole. The overall Forest Plan goals, objectives, standards and guidelines will not be significantly altered. There are no significant cumulative effects resulting from establishment of the Duck Lake RNA.

The following elements make the RNA of unique value: (Establishment Record, Description of Values)

1. Montane Sphagnum Bogs-There are numerous aquatic peatlands scattered throughout the RNA. Sphagnum moss, indicating bog communities, form floating mats along the margins of Duck Lake The species-rich bog ecosystem supports significant amounts of common spikerush, buckbean, woolyfruit sedge, and the insectivorous English sundew This collection of montane fen and bog communities, known as a *mire*, is the best example known from the Blue Mountains.
2. Sedge Fens, characterized by nearly pure stands of bladder sedge, are found at numerous sites within the RNA.
3. Grand Fir/Big Huckleberry Forest communities are typical of the Blue Mountains and surround the wetlands. Grand fir occupies a variety of mesic habitats and dominates associated western larch, lodgepole pine, Douglas-fir, and Engelmann spruce. Understories are occupied by big huckleberry, baldhip rose, and Utah honeysuckle.
4. Old-growth ponderosa pine-Douglas fir forests thrive on granitic soils amongst bouldery bluffs near the center of the RNA. Some trees are very old and support scars from past fires.

This RNA will provide a reference for measuring long-term ecological changes. It will also serve as a control site for determining effects of management based on comparisons with similar sites which have been, and will continue to be modified by human use.

Duck Lake RNA will be managed in compliance with all relevant laws, regulations, and Forest Service Manual direction regarding RNA's and according to the management direction identified in the Forest Plan. Once the RNA is established, a management plan specific to the Duck Lake area will be written. The objective is to maintain the natural condition of the area. No forest products or minerals will be removed, livestock grazing patterns will not be changed, off road vehicles will be excluded, and recreation use will be managed at a low intensity level. Lightning-ignited fires will be allowed to burn in the RNA when they comply with the management prescriptions set for such fires. Prescribed management-ignited fires will be used only in conjunction with approved research projects or when needed to meet RNA management goals.

There are no known significant mineral resources within the RNA. Timber harvest on the RNA will not occur unless for research purposes. Because Duck Lake was identified in the forest planning process as a Research Natural Area, its designation causes no withdrawal from the timber producing base. The RNA has no active grazing allotments. A permitted allotment nearby has facilitated the occasional incursion of cattle along the RNA's southernmost portion. If cattle are not managed to avoid the RNA, it will be necessary to install a protective fence. Recreation use is moderate, consisting of swimming, floating, angling, and in the fall, hunting. A primitive campground with several campsites enables motorized access to the RNA's boundary. A short trail leads from the campground to Duck Lake. Because recreation is significantly impacting the RNA the campground should be relocated to an alternative, less environmentally sensitive site in the area where day users will not access the RNA. Management of the RNA will be directed towards maintaining natural ecological processes and conditions. Therefore, human activities that disturb or modify conditions, as well as interfere with natural processes, shall be prohibited. With the exception of the trail

accessing Duck Lake from the campground there are no system roads or trails, nor a need for system roads or trails in the RNA. Environmental effects as disclosed in the forest final environmental impact statement (EIS) for the Forest Land and Resource Management Plan [LRMP} are still valid (FEIS, pages IV-61, 78, and 85]. There are no threatened or endangered species known to the use the area.

Public Involvement

The proposal to establish the Duck Lake RNA was considered during the development of the 1990 LRMP and Forest Plan. Comments received from interested and affected members of the public supported the establishment of this RNA

This proposed designation was identified in a June 27, 2002 "scoping letter" with the opportunity for public comment. No comments were received in response to this letter. Notification of this proposed designation was also published in the Wallowa Mountain Office quarterly publication, "Schedule of Proposed Actions" beginning in June 2002.

The proposed action was distributed for a 30-day public review and comment period starting on _____. Comments on the proposed action were _____.

Other Alternative Considered

Alternative B-No Action. Under this alternative the Duck Lake area proposed for RNA status would remain as a "proposed RNA" and continue to be protected from uses which would reduce its suitability for RNA designation. This management direction is listed in the Forest Plan [pages 4-84 and 4-85] and will remain in effect until there is a new Forest Plan or there is an amendment to this portion of the Forest Plan. This alternative was not selected because it would not provide long-term protection of the area's unique features.

Finding of No Significant Impact

Based upon the environmental analysis documented in this environmental assessment, this decision is not a manor federal action that would affect the quality of the human environment. Therefore, an environmental impact statement is not required. This determination is based on the following factors (40 CFR 1508.27).

Context

*Although this is an addition to the national network of RNAs, both short-term and long-term physical and biological effects are limited to the local area [Establishment Record, pages 3-8]. The area affected is small [310 acres] in proportion to the forest as a whole.

Intensity

*There are no known effects on public health and safety.

*There are no known effects on historical or cultural resources, actual or eligible National Register of Historic Places, park lands, prime farm lands, wetlands, wild and scenic rivers. No significant adverse effects are anticipated to any environmentally sensitive or critical area [Establishment Record, pages 5-10].

*Effects on the human environment are not uncertain, do not involve unique or unknown risks,

and are not likely to be highly controversial.

*The action is not likely to establish a precedent for future actions with significant effects.

*No significant direct, indirect, or cumulative impacts to the natural resources or other components of the human environment are anticipated. There are no known irreversible or irretrievable resource losses from the decision.

*The decision 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 [Establishment Record, pages 9-10].

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

Implementation

If Implementation of this decision shall not occur within seven days following publication of the legal notice of the decision in the newspaper of record – The Oregonian.

Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215. Any written notice of appeal of the decision must be fully consistent with 36 CFR 215.14, "Appeal Content." The notice of appeal must be filed hard copy with the Appeal Deciding Officer, ATTN: 1570 APPEALS, 333 S.W. First Avenue, P.O. Box 3623, Portland, Oregon, 97208-3623, faxed to (503) 808-2255, sent electronically to appeals-pacificnorthwest-regional-office@fs.fed.us, or hand delivered to the above address between 7:45AM and 4:30PM, Monday through Friday except legal holidays. The appeal must be postmarked or delivered within 45 days of the date the legal notice for this decision appears in the *(enter newspaper of record)*. The publication date of the legal notice in the *(enter newspaper of record)* is the exclusive means for calculating the time to file an appeal and those wishing to appeal should not rely on dates or timeframes provided by any other source. [Update appeal filing information for Washington Office appeal deciding officer]

Electronic appeals must be submitted as part of the actual e-mail message, or as an attachment in Microsoft Word, rich text format or portable document format only. E-mails submitted to e-mail addresses other than the one listed above or in other formats than those listed or containing viruses will be rejected. Only individuals or organizations who submitted substantive comments during the comment period may appeal. This project may be implemented 50 days after this legal notice if no appeal is received. If an appeal is received the project may not be implemented for 15 days after the appeal decision.

Contact Person

The Forest Supervisor of the Wallowa-Whitman 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.

For more information on Duck Lake RNA, contact: Charlie Johnson, Area Ecologist, Wallowa-Whitman National Forest, phone (541) 523-1362.

LINDA GOODMAN
Regional Forester
Pacific Northwest Region

Date 11/18/04

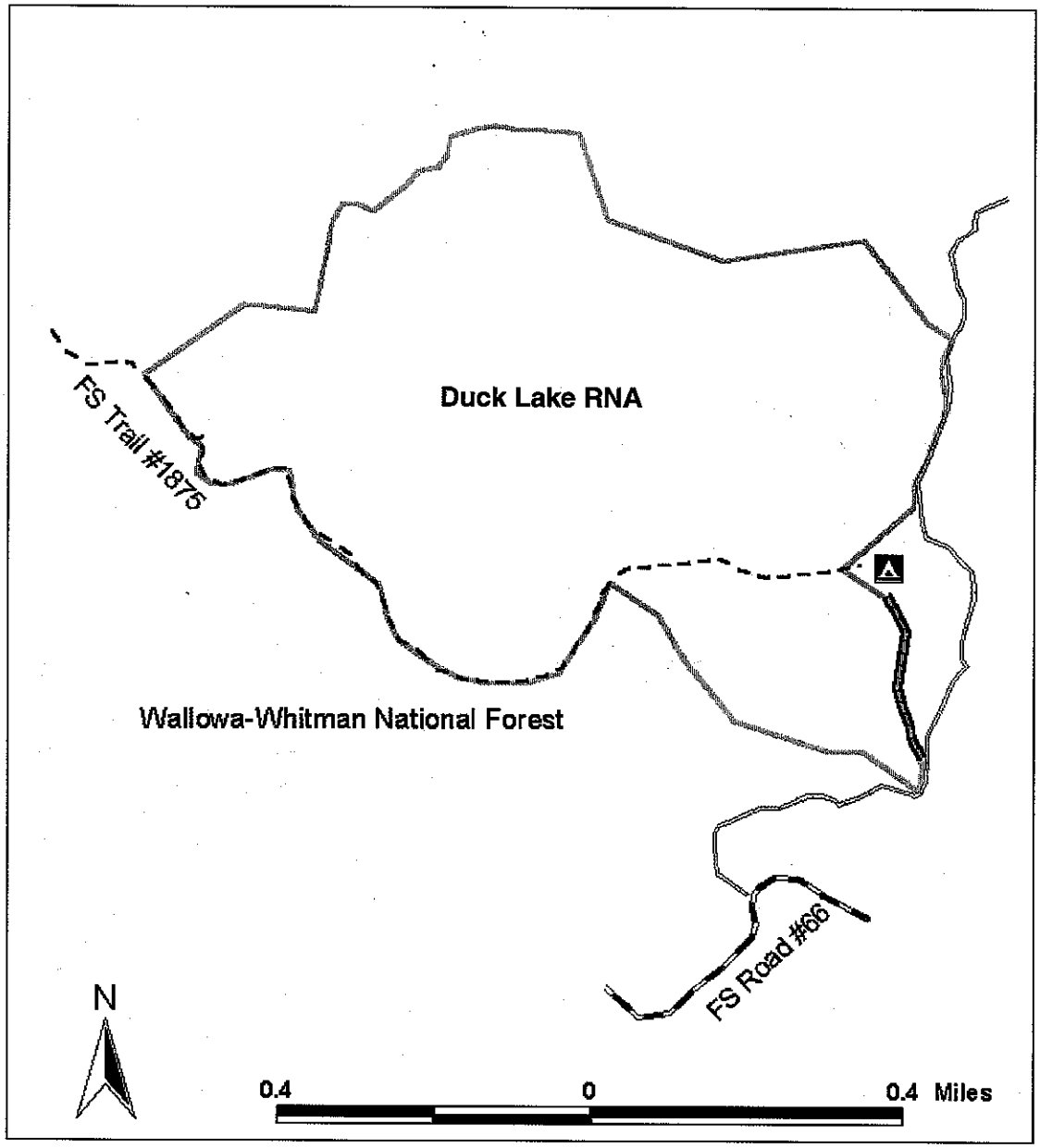

Figure 1. Boundary of Duck Lake RNA and vicinity.

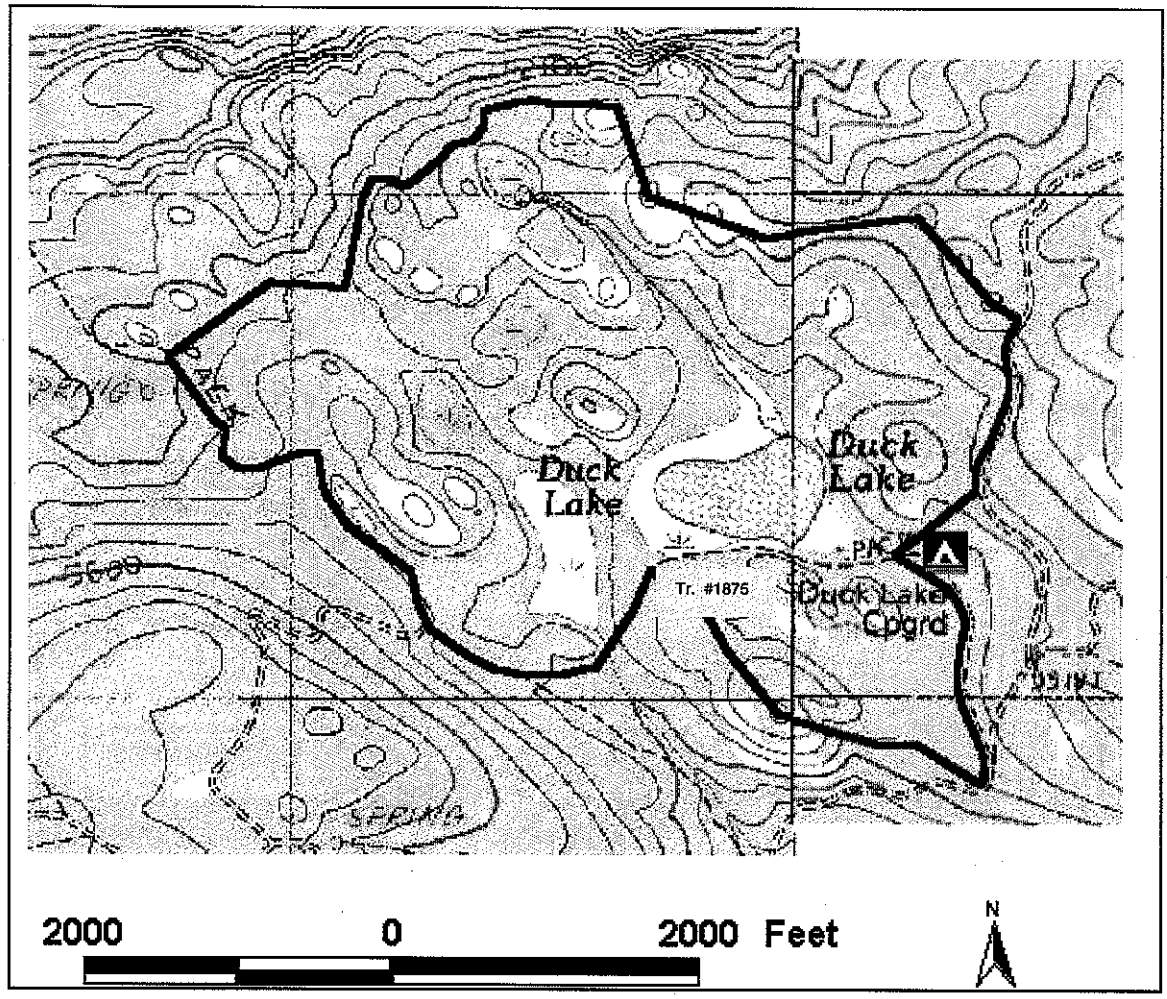

Figure 2. Contour map of Duck Lake RNA. Contour interval is 40 feet.

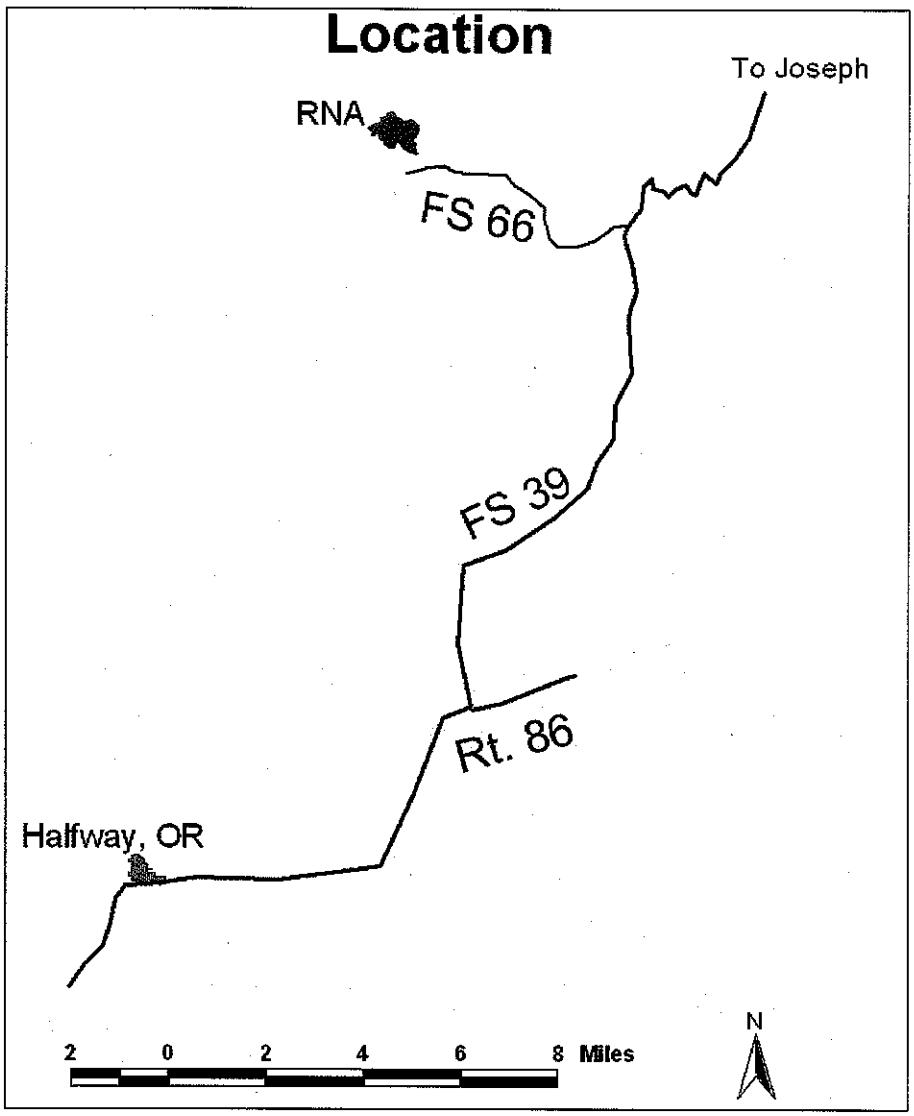

Figure 3. Location of Duck Lake RNA with access routes and nearest town.

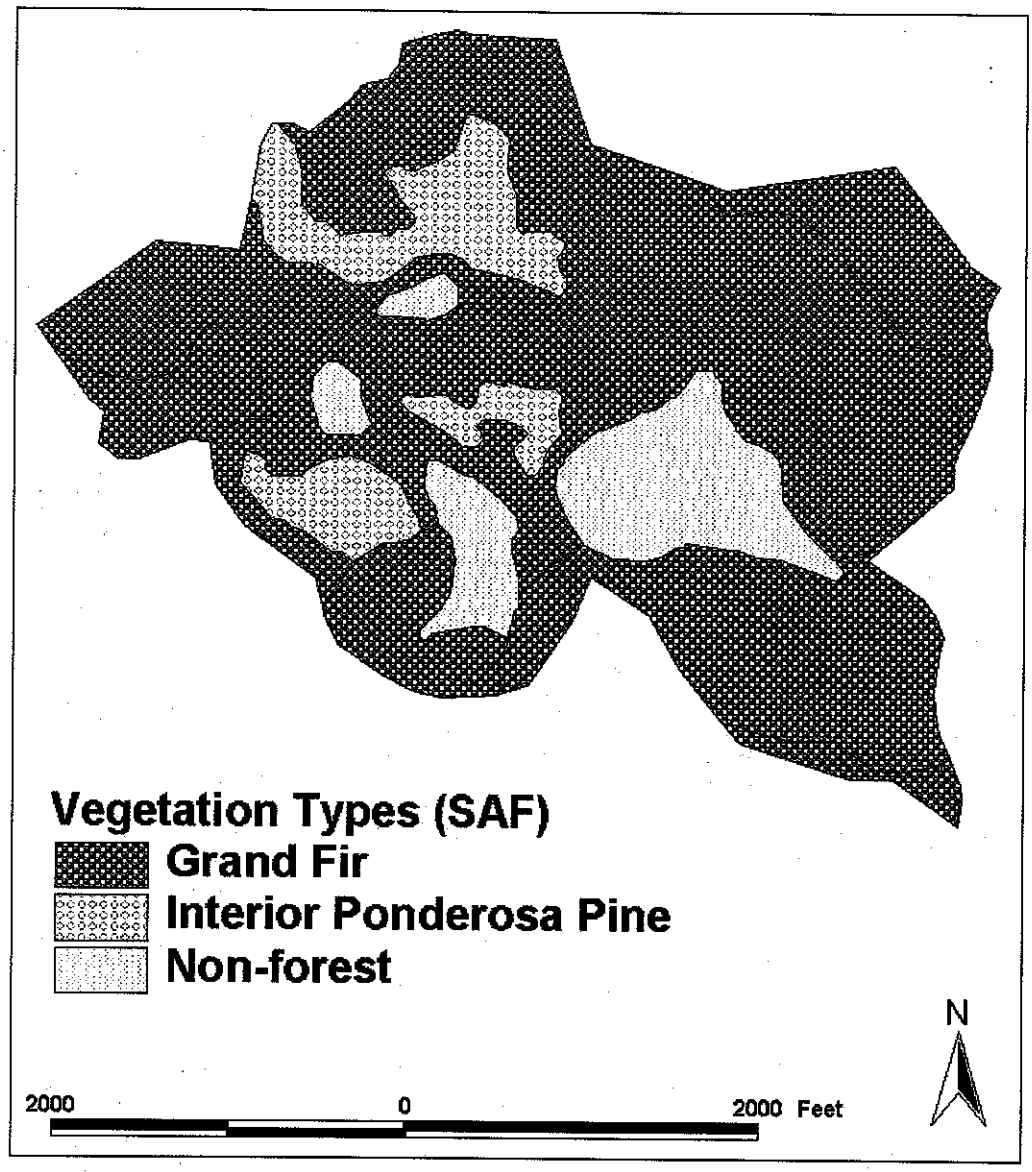

Figure 4. Vegetation of the Duck Lake RNA according to the Society of American Foresters (Eyre 1980) cover types. This coincides with Kuchler (1966) types.