WELCH COMER
& ASSOCIATES, INC.
ENGINEERS SURVEYORS

# APPENDIX 13.6
# Biological Assessment for Section 7 Compliance of Endangered Species by Tom Duebendorfer

# BIOLOGICAL ASSESSMENT

**of**
**Federally Listed Threatened and Endangered Species**

**for the**

## Granite-Reeder Water and Sewer District
## Wastewater System Improvements

## Bonner County, Idaho

Report submitted to:

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On behalf of:
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## *Report Preface*

This Biological Assessment (BA) has been prepared for use by Welch Comer and Associates, the Granite Reeder Water and Sewer District, and their agents. I am qualified to analyze terrestrial and wetland ecosystems. I have 21 years experience in assessing Northwest province ecosystems. I have used the site information and proposed plans as referenced herein. The findings in this report are based on information gathered in the field at the time of investigation and my understanding of the federal, state, and local regulations governing species protection. Prior to construction, all appropriate regulatory agencies should be contacted to concur with the findings of this report and to obtain appropriate approvals and permits.

The BA and effects determinations are presented using thorough application of my knowledge and experience, correspondence with regional experts, and best professional judgment based on the circumstances and site conditions at the time of the study. The final effects determinations are made by the appropriate federal, state, and local jurisdiction. I have provided professional services in accordance with the degree of care and skill generally accepted in the nature of the work performed.

Tom Duebendorfer M.A., PWS
Wetland Scientist/Biologist/Botanist

## 1.0 INTRODUCTION

The Granite Reeder Water and Sewer District (District) authorized Welch, Comer and Associates to prepare an Environmental Assessment ("EA") for the Granite Reeder Water and Sewer District Wastewater System Improvements Project. The District has obtained a grant from the Idaho Department of Environmental Quality (DEQ) to prepare a facilities plan for wastewater collection and treatment. The purpose of that report (Welch Comer 2002) is to develop and evaluate alternatives on the basis of suitability, environmental impacts, cost and maintenance.

Since the majority of the funding arises from federal sources (a State and Tribal Assistance Grant [STAG] from the Environmental Protection Agency [EPA]), a Biological Assessment (BA) for this project is required by the US Fish and Wildlife Service (USFWS). This fulfills the federal agency compliance under section 7 (c) of the Endangered Species Act (ESA) of 1973 (as amended). Based on a list supplied by (USFWS 1-9-01-SP-704, Appendix A), this BA specifically addresses potential occurrence of, and impacts to gray wolf (*Canis lupus*) and Selkirk Mountains woodland caribou (*Rangifer tarandus caribou*) [both endangered]; bald eagle (*Haliaeetus leucocephalus*), Canada lynx (*Lynx canadensis*), bull trout (*Salvelinus confluentus*), grizzly bear (*Ursus arctos*), and Ute ladies' tresses (*Spiranthes diluvialis*) [all threatened]; and western yellow-billed cuckoo (*Coccyzus americanus*) and slender moonwort (*Botrychium lineare*) [both candidate species].

Under provisions of the Endangered Species Act (ESA), federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any endangered, threatened, and proposed species known to or occur in the project area.

This BA provides documentation to meet federal concerns and satisfy the requirements outlined in Section 7(c) of the ESA of 1973 and amendments.

## 2.0 PROPOSED ACTION AND ACTION AREA

### 2.1. Existing Facilities

The Granite Creek-Reeder Bay area (Granite Reeder) is herein defined as the area generally located between Reeder Bay Road (also known as Reeder Creek Road) and Reeder Bay on the western shore of Priest Lake in northern Idaho (Township 61 North, Range 4 West, portions of Sections 9, 16, 17, and 20, B.M., Figures 1 and 2). Elevations range from 2,550 feet at the proposed treatment site to the lake level at 2,438 feet. The District includes both residential and commercial users. Granite Reeder does not currently have a community sewer collection or disposal system, so individual residences as well as commercial establishments utilize their own on-site sewer disposal systems, which vary widely in range from septic tanks with small drain fields to cesspools. Many of the lots are small and some lots contain a primary residence and a guest home. Due to the close proximity of homes, many of these individual on-site systems do not meet DEQ or Panhandle Health Department (PHD) guidelines and pose a health risk to residents and local surface and ground water quality.

The *2000 Technical Guidance Manual for Individual and Subsurface Sewage Disposal Systems* by the DEQ provides standards for subsurface disposal systems. These include specific distances for separation between homesites, wells, public water supplies, property lines, etc., as well as specific construction techniques. The majority of the Granite Reeder community does not meet one of more of the above requirements due to small lot sizes, location and quantity of wells, height of ground water table, and the District's location relative to Priest Lake.

## 2.2 Project Overview

In order to improve the existing conditions of the wastewater and sewage systems in the District, several alternatives are being proposed. The basic purpose is to construct collection facilities to transfer sewage to a community wastewater treatment facility.

## 2.3 Project Design

Based on the Alternatives Analysis discussed in the Facilities Planning Document (Welch Comer 2002), the recommendation for the District's new sewer system includes individual on-site disposal units consisting of positive displacement grinder pump and enclosure systems. These grinder pumps grind the sewage into a fine slurry enabling it be pumped through a pipe. The sewage would be pumped into a pressurized community collection system consisting of 2 to 6 inch high-density polyethylene (HDPE) pipe. The pressurized collection lines would deliver flow into a community wastewater treatment site, consisting of lagoon and land application equipment located at an 80-acre site presently owned by the US Forest Service (Township 61 North, Range 4 West, the NW1/4 of the SW1/4 of Section 17) (Figure 2). The system will be designed in conformance with DEQ requirements.

## 2.4 Construction Methods

Construction of the wastewater system involves 2 primary systems: a collection system and a treatment system. These are discussed below. The equipment used in the project will be similar to those used in typical trenching operations: dump trucks, backhoes, generators, pumps, brush cutting equipment, pickup trucks, etc. The proposed timing is phased: Phase I—construction of lagoon and sprayfield irrigation system (summer 2003), and Phase II—construction of collection systems (summer 2004).

### 2.4.1 Collection System

A grinder pump unit would be located within the public road right of way (ROW). Each individual property owner would be required to remove (or abandon) the existing treatment unit and to connect their home to the District grinder unit. The grinder pump unit is smaller than a conventional septic tank. The pressurized sewer line would be 2" to 6" diameter HDPE pipe buried a minimum of 4.5 feet deep to prevent freezing. The pipes would be heated and fused at the joints to eliminate potential of leakage. The installation will involve excavation of a (minimum of 2.5 feet wide) trench. The pipe will be bedded and backfilled as is typical in utility construction. A construction easement of at least 20 feet will be provided for the collection system. There will be approximately 12,100 lineal feet of 2-inch HDPE; 12,800 feet of 3" HDPE; 7,500 feet of 4" HDPE; and 8,700 feet of 6" HDPE used in the colleciton system. This does not include local hookup to each residence/facility. An approximately 1,000-foot access

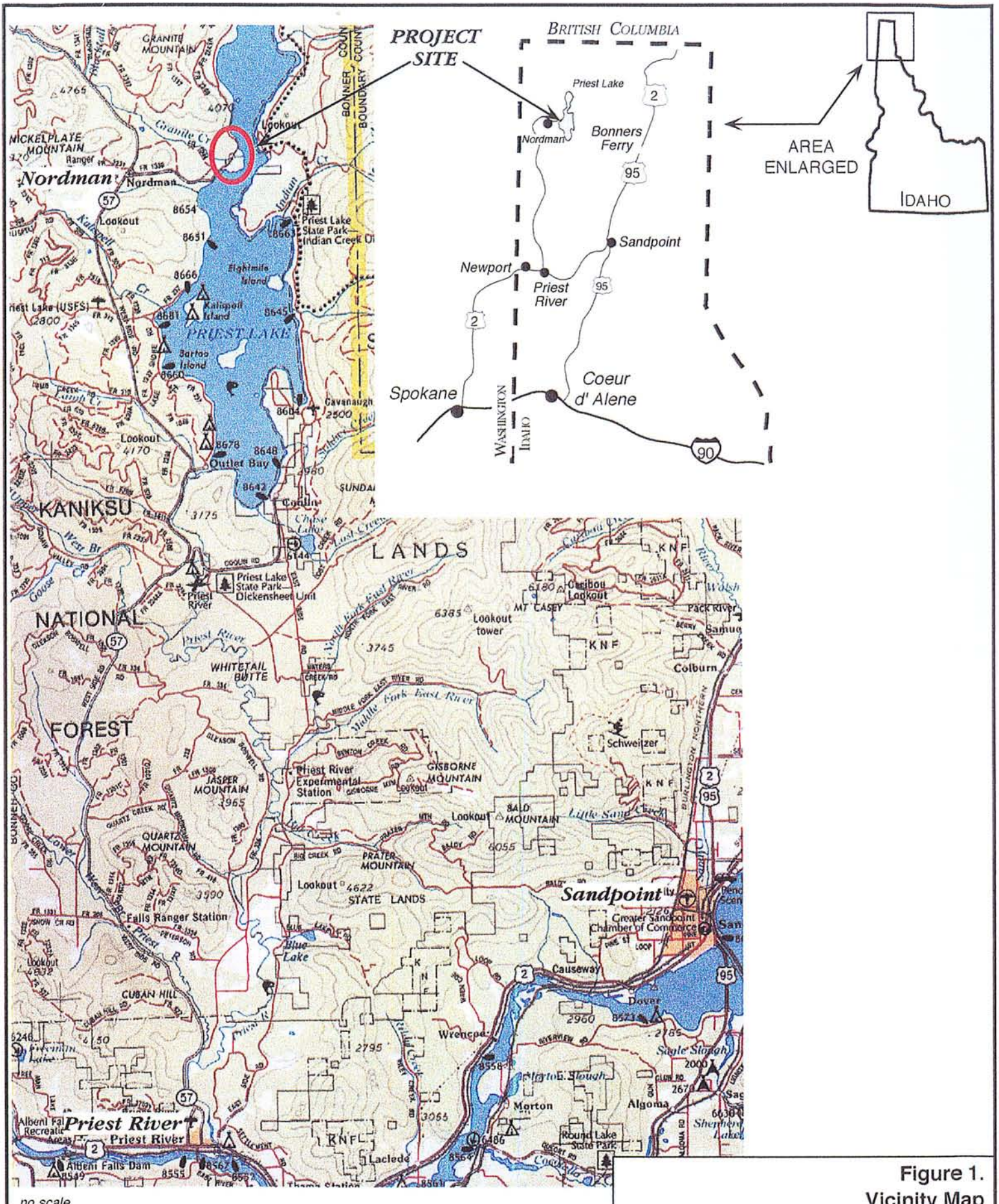
easement west of Reeder Bay Road will be required to connect the collections system to the lagoon site (Figure 3).

2.4.2 Treatment Facility

The proposal involves a sealed bottom, approximately 2 acre, open lagoon as the primary treatment facility. Wastewater is transferred from the collection system to a fenced lagoon where it receives primary treatment and disinfection (using chlorine). In summer (May to October), the resulting effluent is used to irrigate a crop (in this case, spray irrigation on an approximately 22-acre tree plantation), and in winter, the lagoons are used for storage. Active winter storage is calculated to be 6.4 million gallons. To ensure that water quality is protected, irrigation rates are designed to be less than what can be used by the crop plus evaporation. This minimizes the possibility of wastewater seeping down into the water table or running overland into surface waters. DEQ requires an annual land application report to be submitted, summarizing wastewater characteristics, total land application, lagoon levels, etc. All construction and operation techniques, and buffer zones required from land application sites will conform to DEQ requirements.

## 2.5 Action Area

The "action area" is defined herein as the specific project construction areas including existing roadways for installation of collection systems, the wastewater treatment lagoon site, the spray irrigation area and required buffers. The action area also includes potential equipment and construction-related staging areas. According to Figures 2 and 3, the areal extent of the District is about 620 acres.

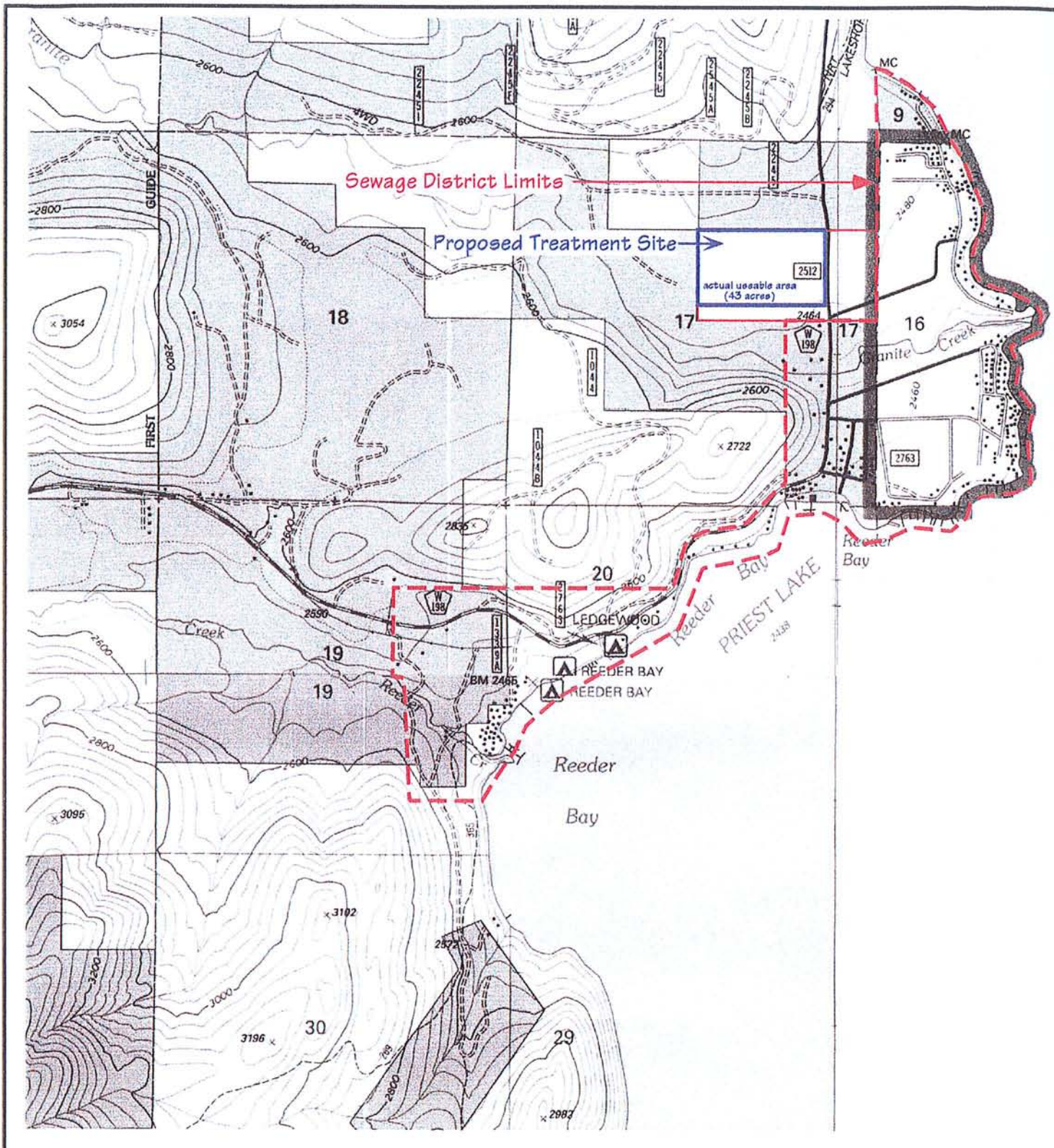



*no scale*

source: Rand McNally 1996, DeLorme 1992

**Figure 1.**
**Vicinity Map**
Granite Reeder Sewage Treatment Project

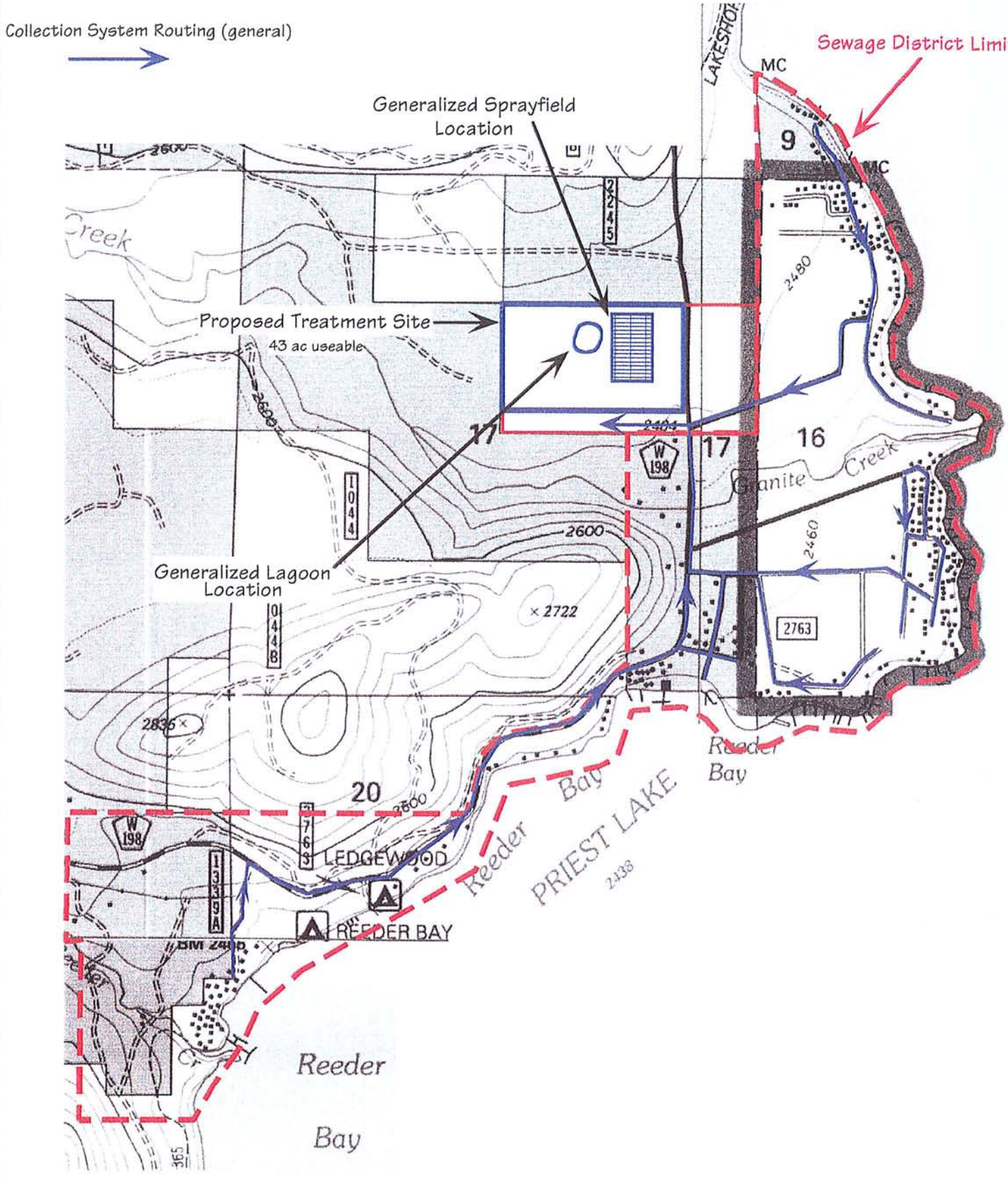
Tom Dussenberry 5/1/02




scale: 1" = 2120' (approx.)
source: Rand McNally 1996, DeLorme 1992

**Figure 2.**
**Project Area Map**
Granite Reeder Sewage Treatment Project

Tom Dickendorfer 5/1/02




no scale

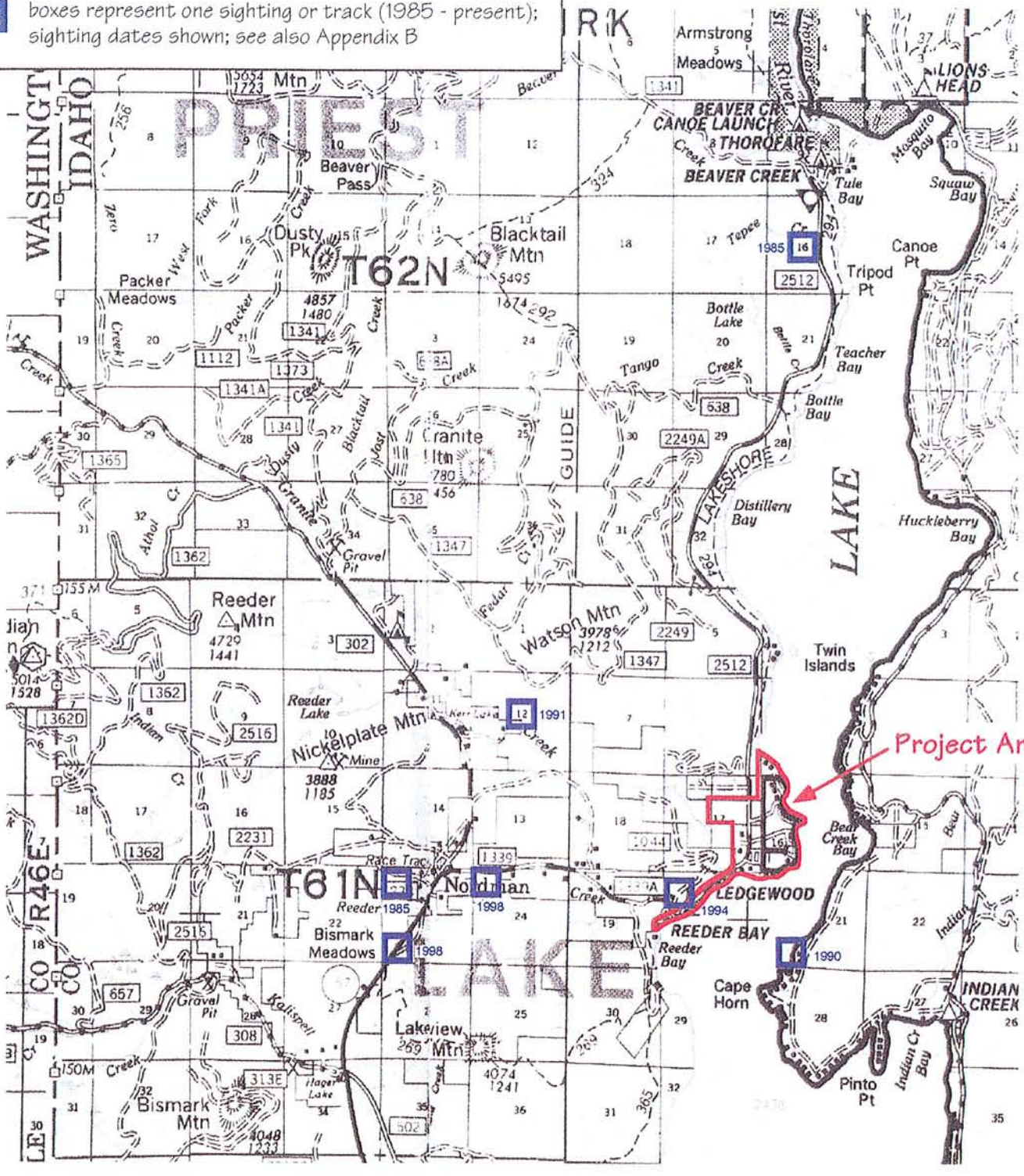
source: USGS Quads (Priest Lake, NW, SW, NE)

**Figure 3.**
**Proposed Action Map**
Granite Reeder Sewage Treatment Project

Gray Wolf Sightings:

sources consulted: USFS, CDC

boxes represent one sighting or track (1985 - present); sighting dates shown; see also Appendix B




1 mile

scale: 1" = 8200' (approx.)

map source: USFS; data source: USFS, CDC

**Figure 4**

**Gray Wolf Sightings**

Granite Reeder Sewer Treatment Project

## 3.0 LISTED SPECIES: CURRENT STATUS, LIFE HISTORY AND HABITAT REQUIREMENTS, AND DISTRIBUTION IN PROJECT AREA

### 3.1 Gray Wolf (*Canis lupus*): Endangered

#### 3.1.1 Current Status

The gray wolf (*Canis lupus*) was listed as federally endangered on June 4, 1973. In 1978 listing was extended to all lower 48 states (except Minnesota) throughout its range. Cause for its decline in numbers include habitat loss, hunting, trapping, and poisoning. Loss of prey base due to land development and influx of human activities are significant in reasons for its decline. In Idaho, a 1994 ruling stated that south of Interstate 90, wolves are listed as "nonessential experimental population" and are given special treatment in terms of management and protection. North of Interstate 90, wolves are listed endangered and given full protection under the provisions of the Endangered Species Act (ESA). For this project, therefore, the gray wolf is listed as "endangered".

#### 3.1.2 Life History and Habitat Requirements

Wolves, being social animals, need large expanses of territory for feeding. The loss of wolves can be directly related to human intrusion into their territory and loss of habitat due to roads and human presence. The gray wolf is the largest member of the dog family (Canidae). Wolves are especially well-suited for fast, far-ranging travels, such as frequent hunting expeditions. Wolves sense of smell is very keen and they are reported to be able to hear other wolves howling at up to 9.7 km (6 mi) away. There are as many as 24 sub-species in North America (Zimen 1981). The gray wolf reaches sexual maturity at about 2 years. Key components of gray wolf habitat include: a year-round prey base of ungulates and alternate prey, secluded denning sites, and space without exposure to humans (USFWS 1987).

#### 3.1.3 Distribution within the Project Area

Gray wolves once ranged over the entire North American continent, except for southern California and southern United States. They are currently restricted primarily to regions of northern Canada and parts of Mexico. Figure 4 shows the most recent sightings of wolf in the project vicinity. Four sightings are documented near Nordman and one in 1994 was near a house between the Reeder Bay and Ledgewood campgrounds. The project area supports moose, elk, white-tailed deer and mule deer as potential prey species. Ungulates are common and available, providing an ample prey base. Populations are not currently limiting wolf recovery in the Selkirk Mountains.

## 3.2 Selkirk Mountain woodland caribou (*Rangifer tarandus caribou*): Endangered

### 3.2.1 Current Status

The Selkirk caribou population was emergency-listed as Endangered in 1983 and a final ruling of its status appeared in the Federal Register in 1984 (USDI 1994). The recovery area for the local population includes the Selkirk Mountains of northern Idaho, northeastern Washington and southern British Columbia, Canada. As part of the recovery plan, caribou were introduced into the ecosystem from source populations in British Columbia between 1987 and the present. By 1990, the local population increased to approximately 55 to 70 animals.

### 3.2.1 Life History and Habitat Requirements

Mountain caribou are mostly found on moderate slopes above 4300' elevation, and use streams, bogs, and other areas composed of mature or old growth evergreen trees (Rodrick and Milner, 1991). Apparently caribou avoid immature forests (less than100 years old). Caving occurs on high elevation rocky ridges with sparse to moderate canopy cover. Caribou feed on lichens, herbaceous vegetation (including mushrooms, leaves, grasses and sedges). *Alectoria* and *Byroria* (lichens attached to trees) are the dominant food source during winter months. Old growth and spruce-fir habitats provide substrate for these lichens.

They are highly adapted to upper elevation boreal forests and typically do not occur in drier low elevation habitats except as rare transients. Seasonal movements are complex in the local population and normally occur as altitudinal patterns moving to traditional sites for different seasons (USDA 1999). The population is threatened by habitat fragmentation and loss, and excessive mortality from predators and illegal human take.

Caribou are found mostly in habitats with the following characteristics: (1) abundance of lichens, (2) stands with greater than 50% canopy cover, (3) and trees with diameters-at-breast-height (DsBH) exceeding 8 inches (Servheen and Lyon 1989 in Rodrick and Milner 1991). Generally in winter, caribou habitat is higher elevation (dense, closed stand of mature evergeens and subalpine areas); in spring they may descend to lower elevations, (south and west aspects and valley bottoms). During summer they once again ascend to higher elevations in mature spruce-subalpine fir stands, and by fall they may again descend to lower elevations to dense-canopied stands, valley bottoms, and riparian areas (Rodrick and Milner 1991).

Basic limiting factors include: habitat loss, natural and human predation, habitat fragmentation and the availability of forage.

3.2.2 Distribution within the Project Area

The proposed project activities are outside the area designated for recovery. The woodland caribou management unit and recent sightings are shown on Figure 5. A 1997 (hair) sighting was located about 2 airmiles north of the proposed treatment site. Other recent sightings include the Elkins Resort area (Layser pers. comm. 2002). The Management Unit is largely above elevation 4500 feet. However, individual sightings of the population may found below that elevation in the Selkirk Mountains in Engelmann spruce/subalpine fir and western red cedar/western hemlock forest types.

## 3.3 **Bald Eagle** (*Haliaeetus leucocephalus*): Threatened

3.3.1 Current Status

The bald eagle is presently listed threatened, although since June 1999 it has been proposed for de-listing. The proposed project lies within Zone 7 of the Pacific States Bald Eagle Recovery Area. The goals of the Recovery Area have been exceeded. No critical habitat has been designated for this species. These facts indicate that the recovery goal is being accomplished for this zone.

3.3.2 Life History and Habitat Requirements

Wintering activities occur from about October 31 to March 31 (USFWS 1986). Wintering bald eagles concentrate in areas where food is abundant and disturbance is minimal (Rodrick and Milner 1991). Bald eagle food habits vary, but they typically feed on fish, waterfowl, and seabirds, either captured or consumed as carrion. Bald eagles winter near their food source, typically near large bodies of water including large lakes, reservoirs, rivers, and coastal areas. Eagles typically perch near their food source during the day and prefer the tallest trees which afford the best views. Tree species is less important than tree structure. Deciduous and dead coniferous trees near the feeding area are preferred for diurnal bald eagle perching (Stalmaster and Newman 1979). Evening roosts are generally established near the feeding area, but may occur inland as well (Steenhof 1978 in Peterson 1986). Secluded, mature, and old growth forests provide preferred roosting habitat (Rodrick and Milner 1991).

Bald eagle nest parameters in the Pacific Northwest include proximity to water with an adequate food source, large trees with sturdy branching at sufficient height for nesting, and stand heterogeneity both vertically and horizontally (Grubb 1976). Typically, cottonwoods that are 9 inches DBH and 70 to 100 years old (often the largest tree in the stand) are chosen for nest sites (Herrick 1933, Bent 1937, Snow 1973, Lehman 1979). Cottonwoods are also frequently used as roost trees. The height of the tree, however, is the most important factor and the tallest trees in an area are chosen (Jonen 1973, Snow 1973, Lish and Lewis 1975, Steenhof 1978, Stalmaster and Newman 1979, Steenhof et al 1980). For cottonwoods, the average height is approximately 22 m (74 feet) with an average DBH of 42-66 cm (16 to 26 inches) (Lish and Lewis 1975, Steenhof et al 1980).

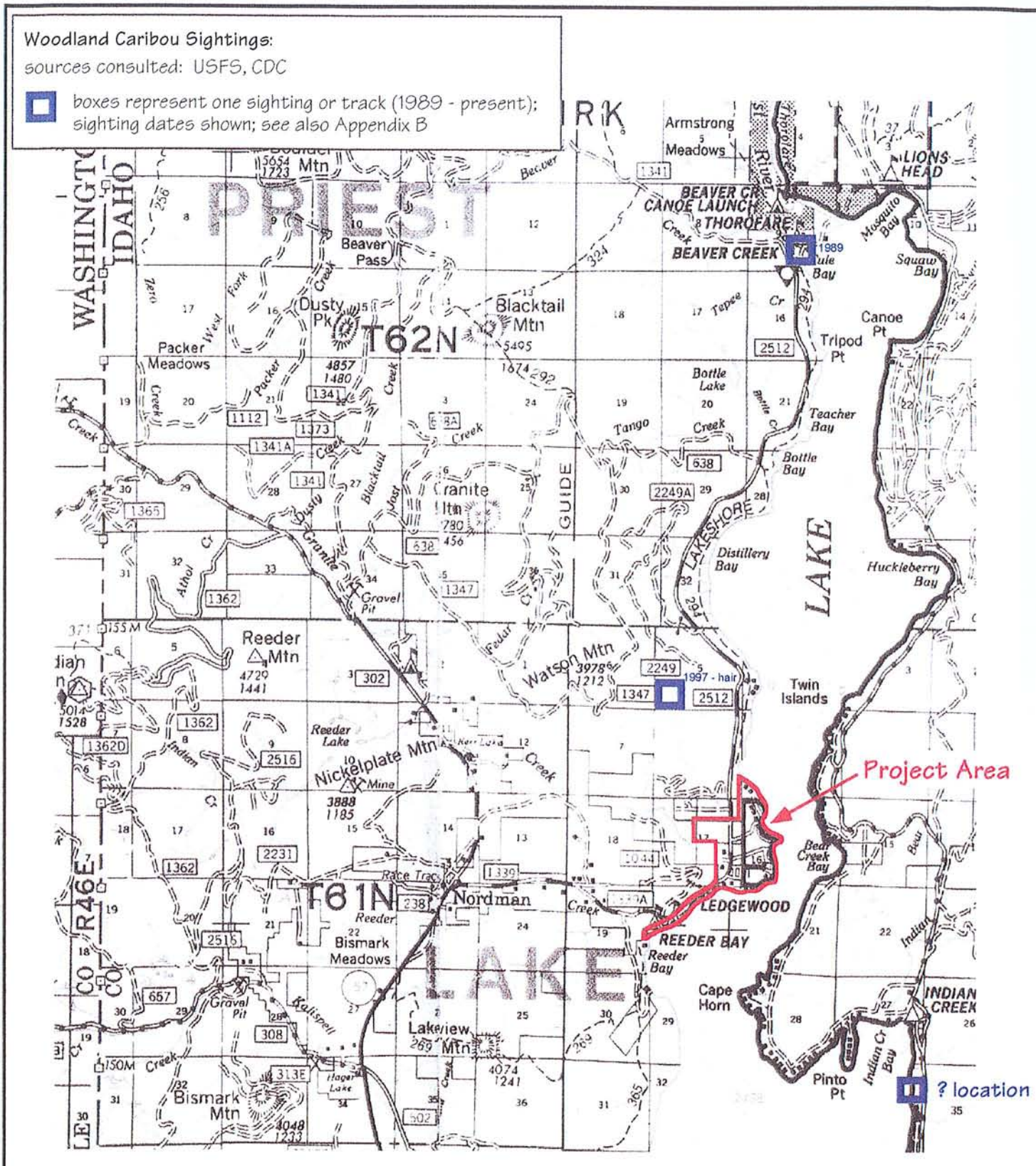



**Figure 5**
**Woodland Caribou Sightings**
Granite Reeder Sewer Treatment Project

Such forest components are typical of mature and old growth forests. As with perch and roost tree selection, nest tree structure is more important than tree species (USFWS 1986). In western Washington, 218 bald eagle nest locations were studied, and the average nest distance from water was 94 yards with a range of 5 to 880 yards (Grubb 1976). Nesting activities may last from January 1 to August 15 (USFWS 1986).

### 3.3.3 Distribution within the Project Area

The proposed project lies within Zone 7 of the Pacific Bald Eagle Recovery Area. Wintering bald eagles are typically observed in the project area from late October to mid-March, but can be observed essentially throughout the year.

No nest sites have been reported by the USFS or the Conservation Data Center (CDC) (Appendix B). Tim Layser (USFS) has supplied me with known locations and sightings of bald eagles from 1983 to the present (Layser pers. comm. 2001). Figure 6 shows that bald eagles are commonly sighted in the area near the project limits. There are a few nests in the general vicinity (Kalispell Island [about three miles south of the project area], Outlet Bay [more than 10 miles south of the project area], and Bear Creek [on the east side of Priest Lake at Bear Creek, less than one mile from the project area]. All three nest areas fledged at least one young in 2000 and 2001. Eagles have also been sighted up Granite and Reeder Creek. Annual eagle surveys documented the presence of eagles near the mouth of Granite Creek, and a few sightings in the Ledgewood and Reeder Bay campgrounds.

The location of the proposed treatment site precludes adequate foraging habitat (no open water within sight distance, and the trees in the old growth portions (Section 3.9.1) do not afford appropriate perching trees because of the density of the forest. While the lakeshore area could support nests—none were identified nor observed during the field visits.

*"... the recovery goals in many of the key bald eagle use areas in Zone 7 have already been met or exceeded."* (USFWS 1996). These facts indicate that the recovery goal is being accomplished for this zone. No critical habitat has been designated for this species.

Spawning occurs in the fine gravel substrate of the upper reaches of smaller clear streams. Eggs incubate over the winter and hatch in late winter or early spring. Hatching generally requires 3 to 4 months. Emergence typically occurs after a peak in stream discharge from early April through May (Pratt, 1992). Juveniles may rear in these streams for up to three years (McPhail and Murray, 1979; Pratt, 1985; and Elle et al, 1995). This species is particularly sensitive to sedimentation because of this relatively long incubation and development phase. Bull trout generally take five to seven years to reach sexual maturity. The main diet of bull trout consists of terrestrial and aquatic insects, macrozooplankton, mysids and fish (University of Idaho, 1998).

Growth, survival, and long-term population viability is dependent on cover, channel stability, substrate composition, water temperature, and suitable migration corridors (Rieman and McIntyre 1993). The critical features for suitable migration corridor are: water temperatures, adequate flows, lack of physical obstructions (including log jams, mill ponds, irrigation diversions, and dams), and predation. The introduction of lake trout (*Salvelinus namaycush*), as well as harvest (intentional and unintentional) have been identified as significant reducers in bull trout numbers.

### 3.5.3 Distribution within the Project Area

The proposed project lies within the Priest Lake watershed. Since federal listing is relatively recent, specific recovery plans have not been completed. Only data from two surveys (1983 and 1984) were available the internet site Streamnet, a department in the Idaho Department of Fish and Game. Those data indicated the presence of adult bull trout (mean numbers = 45) at rivermile 1.5 up Granite Creek at the Granite Creek weir. It is known that bull trout inhabit (Davis pers. comm 2002; Dekome, pers. comm. 2001) and rear (Mahroney, pers. comm. 2002) in Priest Lake. They move up the local streams in the area, including Granite Creek. Bull trout within this drainage exhibit adfluvial and resident life histories. Adfluvial fish spawn in the streams and after about three years they move into Priest Lake. Bull trout are also known to spawn upstream in the North and South Forks of Granite Creek (nearer the Washington-Idaho border—thus the adfluvial population of bull trout in Priest Lake definitely move up and rear in Granite Creek (Mahroney, pers. comm. 2002). Spawning may occur in the lower reaches of Granite Creek (Davis pers. comm. 2002), but this is not documented—thus the reach of Granite Creek through the project area is a migration corridor. There are no reported bull trout in Reeder Creek. (Davis, pers. comm. 2002).

## 3.6 Grizzly bear (*Ursus arctos horribilis*) Threatened

### 3.6.1 Current Status

The grizzly bear (*Ursus arctos horribilis*) was listed as threatened in the lower 48 states on July 28, 1975. As with the gray wolf, cause for its decline in numbers include habitat loss and hunting. Because of the grizzly's need for remote, relatively secluded habitat, most of its decline in numbers in the northern states can be attributed to influx of human activities and the concomitant reduction in food base due to land development.

### 3.6.2 Life History and Habitat Requirements

In our area, the grizzly is the largest member of the bear family (Ursidae). The grizzly becomes sexually mature around three years of age. Two to four young per female usually born inJanuary. Adult coloration ranges from yellowish to dark brown to nearly black. Mature individuals often have whitish-tipped hairs lending a "grizzled" effect to the bear's outline. Grizzly bears are typically excellent diggers, eating a wide variety of roots, corms, bulbs, tubers, and small mammals. Grizzly track and black bear tracks are often nearly impossible to differentiate.

Grizzlies are most active at twilight, but may forage at any time of day or night. Although mostly observed solitary, they may be seen in small family units. They hibernate at higher elevations (greater than 1,524 m [5,000 ft]) in the mountains. A grizzly home range may be up to 80 km (50 mi), but is generally 40 km or less.

Grizzlies prefer ridgetops, alpine meadows, and forest-meadow ecotones in relatively remote or secluded forested habitats. They are not often reported in lowlands or in developed areas. Disturbance from roads and human activity (construction or machinery) is often an effective deterrent to grizzly presence. Important food sources include succulent undergrowth early in the season (after emergence from hibernation) and berries (in our area, particularly huckleberries) in late summer and fall.

### 3.6.3 Distribution within the Project Area

The Granite Reeder Wastewater Treatment project lies within the Selkirk Ecosystem Recovery Zone (USFWS 1993b). The population estimate for the entire Selkirk ecosystem is unknown, but between the years 1985-1990, 26-36 bears were known to occur within a study area that composed approximately one-third of the ecosystem (USDI 1993).

The northern portion of the proposed project just grazes the Lakeshore Bear Management Units (BMU) (Figure 8). The Lakeshore Grizzly BMU is about 18,000 acres and is the smallest of the BMUs in the Selkirk Ecosystem. Its eastern boundary with Priest Lake is highly developed with summer homes, resorts, campgrounds, etc. which make grizzly bear habitat maintenance and improvement unattainable in this area. Currently, security is maintained at about 30 percent for the spring, summer and fall seasons. Less than 20 percent of the BMU is classified as "core" habitat. For the Lakeshore BMU where it is not feasible to achieve similar security and core objectives because of landownership patterns, the criteria for managing this BMU would be to achieve a no net lost of existing security and core habitat (USDA 1999). Grizzly bears have not been sighted recently within four miles of the project area—with the nearest ones including a 1995 sightings behind the Nordman store (about 3 airmiles west of the project area), and one in 1990 about 3 airmiles north (in the Distillery Bay area) (CDC 2002).

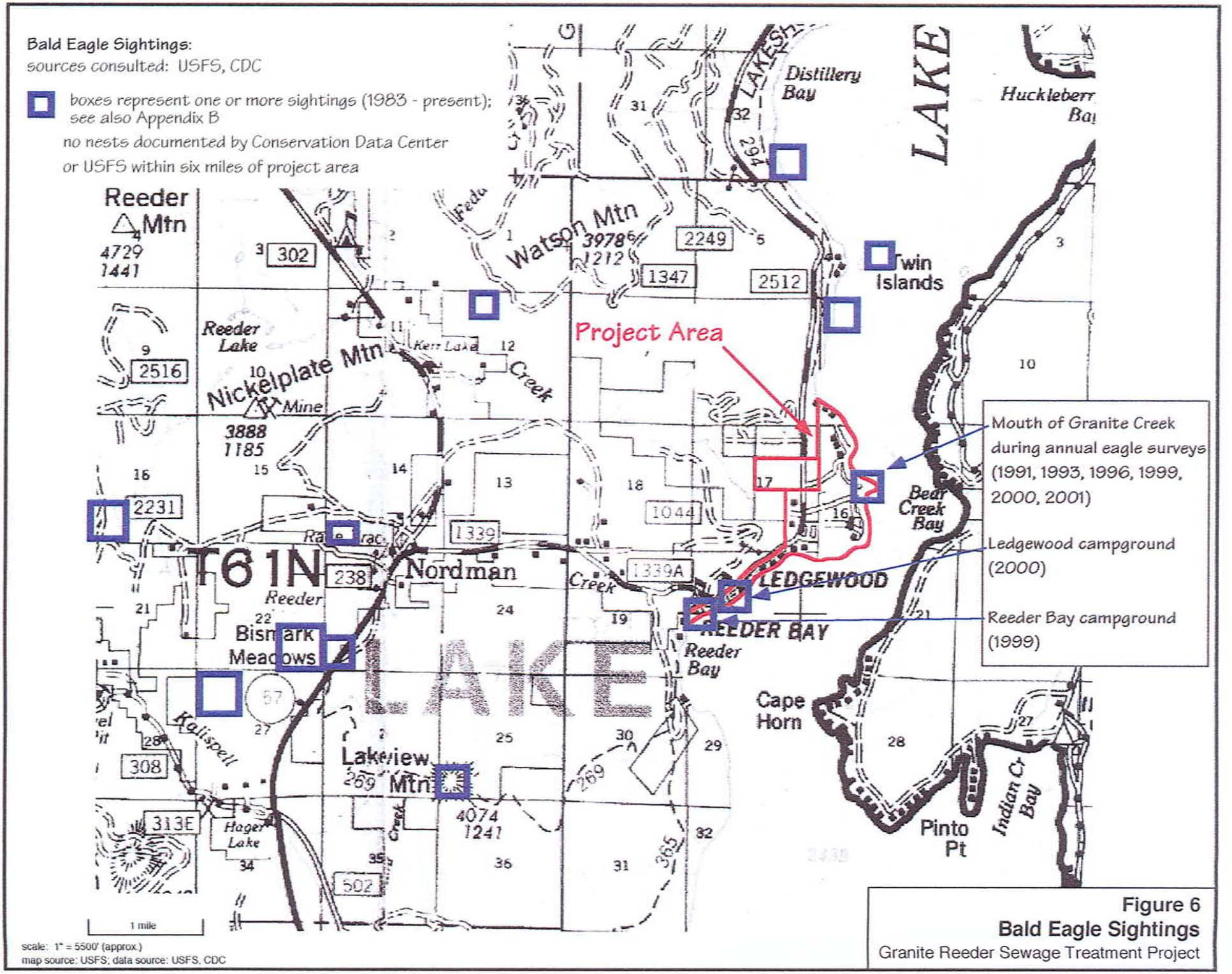



**Figure 6**
**Bald Eagle Sightings**
Granite Reeder Sewage Treatment Project

## 3.4 **Canada Lynx** (*Lynx canadensis*): Threatened

### 3.4.1 Current Status

The lynx was proposed for listing by the USFWS on July 8, 1998. Formal publication of listing occurred on March 24, 2000, effective April 24, 2000. To date, there is no Federal Recovery Plan. The USFS has a draft document "Canada Lynx Conservation Assessment and Strategy", dated January 2000. The report discusses potential assessment strategies to be taken when the lynx became officially listed. Additionally, the Colorado Department of Transportation has produced a document "Determining Impacts to Canada Lynx as a Result of Projects Proposed by the Colorado Department of Transportation". Some information given below is cited from this latter document.

### 3.4.2 Life History and Habitat Requirements

Lynx are mostly solitary, nocturnal, and secretive. They take refuge under ledges, trees, deadfalls, and in thick cover. Their principal food is the snowshoe hare—and are thus most often associated with high snowshoe hare populations. Home ranges vary from 8 to several hundred $km^2$ (CDOT 1999). Lynx homerange and movement is dependent on food availability and lynx may expand their territory considerably in search of food.

Lynx are associated with northern boreal forests (Alaska and Canada) dominated by spruce, subalpine fir and lodgepole forests (Koehler and Brittel 1990). Their habitat requires a mix of successional forest stages. They also occur in lower numbers in the boreal forests of New England, the upper Midwest states, and in montane forests of the Washington Cascades and Northern Rocky Mountain province of Idaho and Montana. High elevation forests (generally above 2500 m [7000 ft]) in Utah, Wyoming, and Colorado represent the southern extent of known lynx range (Fed. Reg. 1998). Kootenai National Forest has prepared a Lynx Conservation Strategy (USFS 1997), which defines suitable ranges as occurring above 4,000 feet elevation. Lynx have a strong preference for densely forested cover types. In our area, they are more associated with higher elevation (greater than 1400 m [3500 ft]), mesic habitats. Since the snowshoe hare occurs mostly frequently in more open areas, the lynx faces threats by entering these more open areas, and ultimately return to forested cover as soon as the food source diminishes (ODOT 1999). Thus, continuous cover (openings less than 300 feet) is generally required for travel corridors (USFS 1997).

Lynx typically do not cross open areas such as roads or railroads. Thus their response to open exposed areas is negative. In addition, the presence of roads makes available, dispersal corridors for lynx competitors (cougar, bobcat, and coyote). Habitat fragmentation is thus considered one of the most important causes of lynx population reduction (ODOT 1999).

3.4.3 Distribution within the Project Area

Since the listing, USFS has, together with the draft "Canada Lynx Conservation Assessment and Strategy" document, determined several Lynx Analysis Units (LAU's). The LAU's in the vicinity of the the Granite Reeder Wastewater Treatment project are located as shown on Figure 7. The Sema and Kalispell LAU's are well west of the proposed project; however the Blacktail LAU approaches the proposed treatment site. All of the recent sightings have been in the Kalispell LAU (CDC, USFS, Figure 7). These sightings are 6 miles or more from the proposed treatment site, and only one record indicates the lynx has been observed closer the lake in the vicinity of the district limits (south end of Distillery Bay, Figure 3). Most of the sightings have been listed as "high" reliability (Appendix B), and most of the occurrences have involved a sighting as the lynx crossed a Forest Service road.

## 3.5 **Bull Trout** (*Salvelinus confluentus*): Threatened

3.5.1 Current Status

Since 1992, private groups have petitioned the USFWS to list bull trout throughout its range. In June 1998, the Department of the Interior announced that bull trout had been placed on the Endangered Species List as "Threatened". On July 10, 1998 the bull trout became formally listed in the Federal Register. Since federal listing is relatively recent, specific recovery plans have not been completed.

3.5.2 Life History and Habitat Requirements

Bull trout is a freshwater species closely related to the anadromous Dolly Varden (*Salvelinus malma*). The two have been considered separate species only in recent years. Bull trout are the only native char species in the Priest Lake drainage.

Bull trout exhibit two life history strategies as adults: resident and migratory. Migratory bull trout live in large rivers or lakes and migrate to small stream headwaters to spawn. Resident populations spend their entire lives in smaller streams. Bull trout typically occupy the bottom habitat in contrast to other trout species. Depending on stream temperatures and other environmental conditions, bull trout generally spawn from the end of August through November. Migration is thought to be initiated by warming water temperatures since bull trout prefer cold water and move to colder upstream reaches. It is also suggested that lower water temperatures initiate spawning activity (Fraley and Shepard, 1989; Rodrick and Milner 1991). Bull trout require stream temperatures of 4-10 degrees C. with optimum conditions at 6-8 degrees C. for spawning.

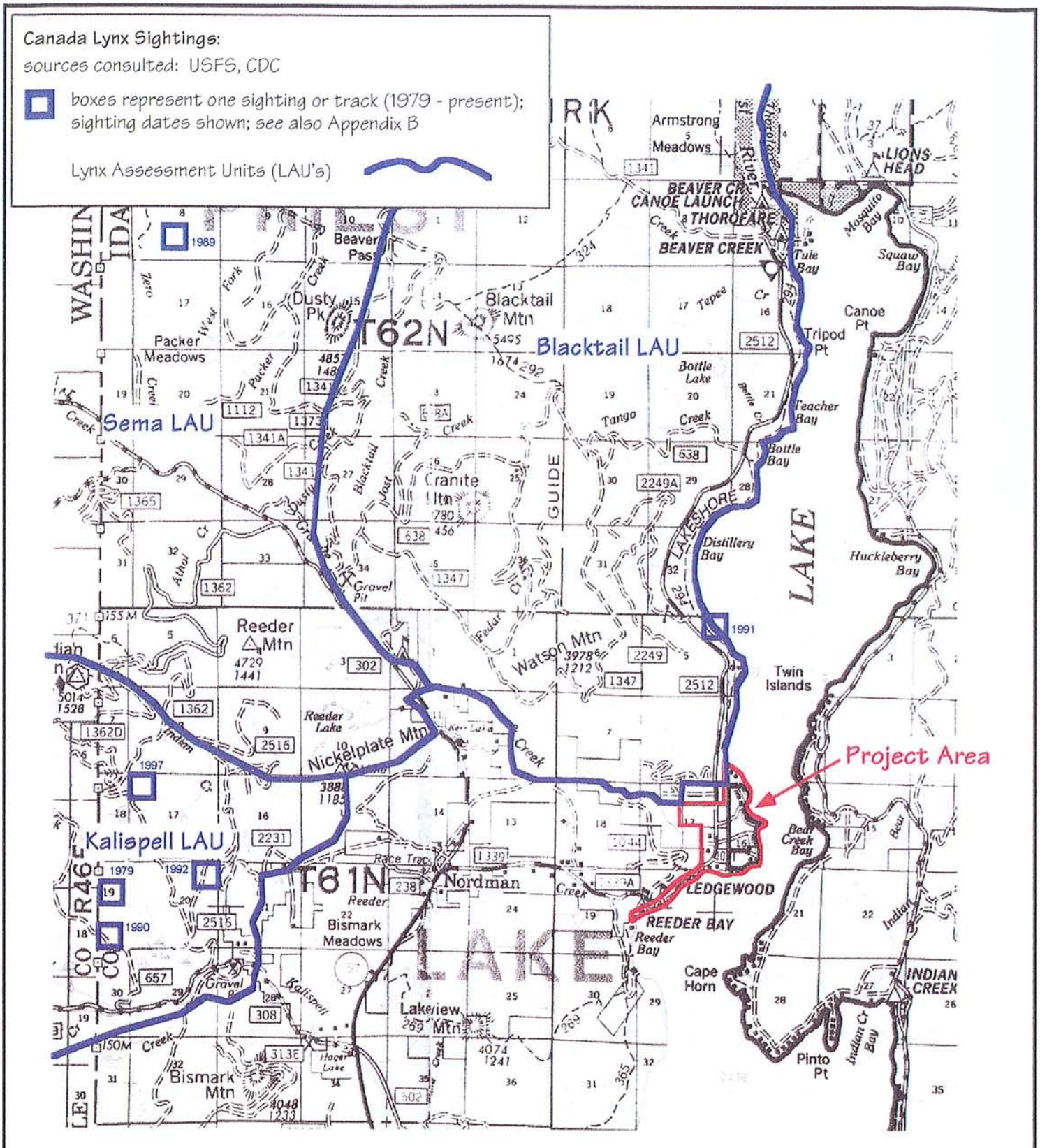



**Figure 7**
**Canada Lynx Sightings/Assessment Units**
Granite Reeder Sewer Treatment Project

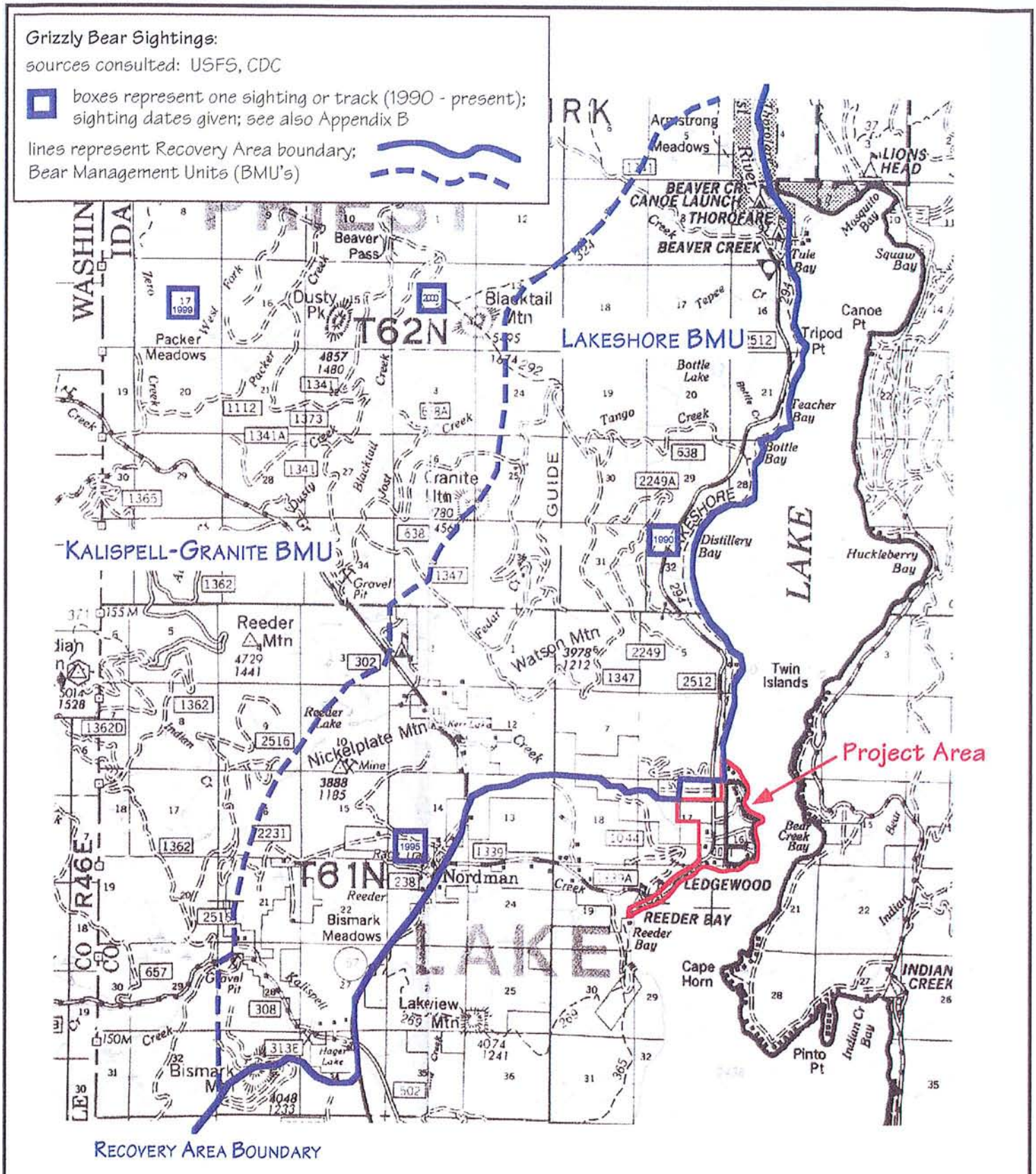



**Figure 8**
**Grizzly Bear Management Units/Sightings**
Granite Reeder Sewer Treatment Project

## 3.7 Ute ladies' tresses (*Spiranthes diluvialis*): Threatened

### 3.7.1 Current Status

*Spiranthes diluvialis* Sheviak (Ute ladies'-tresses) is a perennial herbaceous plant species in the Orchidaceae (orchid family). First formal FWS listing occurred in 1992, and the final rule of Listed Threatened (LT) in Idaho occurred in 1996.

### 3.7.2 Description and Habitat Requirements

Description

This species grows to about 50 cm (20 inches) in height and bears alternate, linear-lanceolate, 1 cm by 28 cm (1/2 to 10 inches) long leaves. The leaves are typically more basal, being reduced to small bracts in the upper part of the stem. The leaves often persist after flowering. The inflorescence is a spike, typically bearing numerous, spirally arranged white to yellowish flowers. As is with orchids, the seeds are numerous, tiny, and almost powder like. Because of the lack of endosperm, germination is dependent on a species-specific mycorrhizal association.

Two other species of *Spiranthes* occur in Idaho, one (*S. romanzoffiana*) is extremely common, and generally found in coniferous forests and meadows throughout the state and in the Pacific Northwest in general. The other (*S. porrifolia*) is known from only one population in Idaho (Hells Canyon) and otherwise grows further south and east in the Rocky Mountains. They are not considered sympatric though a few exceptions occur. The rare species, *Spiranthes diluvialis*, is a polyploid and it has been suggested by Sheviak that *S. diluvialis* may have originated through hybridization between *S. magnicamporum* (a Great Plains species) and *S. romanzoffiana* (the more widespread, boreal and subalpine species).

The rare species (*Spiranthes diluvialis*), flowers late August through late September; whereas the common species (*S. romanzoffiana*), and one most likely to occur in similar areas, flowers in mid-summer (late June to early August).

Habitat Requirements

Its major life zone habitat is sagebrush-steppe to transition zone with montane forest (in lower timberline). Rangewide, all known populations generally occur below the coniferous forest vegetation zone. The populations are within steppe, shrub-steppe, or pinyon-juniper woodland areas. Generally speaking, *Spiranthes diluvialis* is a lowland species occurring on plains, in intermontane valleys, and in narrow mountain valleys. Most populations are in valley bottoms along medium to large streams and rivers of moderate gradient (not slow and meandering). It also occurs occasionally in meadows and irrigated pastures, isolated from rivers and streams (Moseley 1998b).

All *Spiranthes diluvialis* populations in Idaho occur on alluvial deposits (very coarse cobbles to fine-sands and sandy loams). Soils are Xeric Torrifluvents. Essentially all Idaho populations are submerged annually or nearly annually during high river flows in late spring/early summer. However it does not occur in the standing-water habitats of adjacent channels nor does it occur on the higher benches where the hydraulic lift is not enough to keep the near-surface soils moist enough. Although Idaho populations are submerged in spring and the coarse-textured soils drain as the season progresses, the soil surface appears to remain moist throughout much of the

growing season. By mid-season, the water table may not be at the soil surface but soils are maintained moist by the capillary fringe of the soil water levels.

Specific habitat characteristics in Idaho populations include an alkaline wet meadow, and mesic habitats on edge of flood channels (active in spring and inundated spring at 23,000 cfs). Such habitats do not appear to be present in the Granite Reeder Wastewater Treatment Facility project area. The range of Ute ladies' tresses in Idaho coincides with the range of *Elaeagnus commutata* (silverberry). This species is not present in northern Idaho.

The conclusion of the most complete status report to date on Idaho occurrences of *Spiranthes diluvialis* is given by Moseley (1998b): Prime habitat includes riparian and wetland habitats within sagebrush-steppe and pinyon-juniper woodlands zones below 7000' elevation. Suitable habitat in southern Idaho below 7000' elevation includes lower timberline habitats or in shrub-steppe or woodland transition to montane coniferous forest. These two habitat types occur in the upper Snake River drainage. Potential habitat in northern Idaho could include the steppe zones of the Palouse Prairie, Rathdrum Prairie [around 2500' elevation], and canyon grasslands [to 4500' elevation]). Montane coniferous forest, subalpine coniferous forest, and alpine zones are considered unlikely habitat.

*Spiranthes diluvialis* habitat in the single Washington population (in Okanogan Valley) is in the *Purshia-Sarcobatus* (bitterbrush-greasewood) scrub/steppe habitat type. It has not been found in the coniferous forest biome.

### 3.7.3 Distribution and Associated Species

The historical range of this species was Colorado, Utah, and extreme eastern Nevada. New populations have since been discovered in other portions of Utah and Colorado (Ute Ladies Tresses Recovery Team 1995), as well as eastern Wyoming in 1993 (Fertig 1994), Montana in 1994 (Heidel 1997), Nebraska in 1996 (Hazlett 1996), Idaho (Snake River Basin) in 1996 (Moseley 1997a), and one in Washington (Okanogan Valley) in 1997 (Heidel 1998; USFWS 1998a). It is highly discontinuous within its range.

In Idaho the known populations are all located in the Snake River floodplain in the far eastern part of the state, in Jefferson, Madison and Bonneville counties. Populations are scattered along 49 river miles from near the confluence of the Henry's Fork, upstream to Swan Valley, nine river miles below Palisades Dam (Moseley 1998b).

There are no known populations of Ute ladies' tresses within the Idaho Panhandle, nor are there wetlands in or near the project area which could potentially harbor this species.

## 3.8 Candidate Species

Candidate species receive no protection under the ESA, but are included for planning purposes—these species could be formally proposed and listed during project planning. Typically the FWS encourages that if there is any indication that project may adversely impact a candidate species, the project be modified to minimize or avoid these impacts. Protection provided to these species prior to listing could preclude possible future listing.

### 3.8.1 Western yellow-billed Cuckoo (*Coccyzus americanus*)

This species is considered a candidate for federal listing by the FWS. It is a rare species breeding in deciduous, riparian woodlands from southern British Columbia south through California to western Mexico, and east from southern Idaho through western Colorado to western Texas. It winters in South America (USFWS 1985). Feeding largely on green insects (e.g., katydid and sphinx moth larva), the yellow-billed cuckoo apparently prefers to inhabit dense foliage especially within 30 feet of the ground (thickets). In California, very few cuckoos were found in riparian vegetation areas less than 4 acres in extent.

Being a rare and secretive bird, its numbers (verified sightings) have diminished to the point where in Washington and Idaho, few sightings have occurred since the 1930's. The Washington sightings have been in Grant, Okanogan, King, Snohomish, and Benton Counties. The Idaho nesting areas and probably nesting areas documented by CDC (CDC does not track individual sightings) have been in southern Idaho. The most northern point that CDC has in their database is in Lewis County near the border with Idaho County.

### 3.8.2 Slender Moonwort (*Botrychium lineare*)

On March 9, 2001, the FWS has petitioned to list this fern under the ESA. Slender moonwort is a small perennial fern with one 2 to 7 inch high, highly divided leaf. It was described in 1994 (Federal Register 2001). Its habitat is meadows with tall grass and forbs, and in small openings within forests dominated by a spruce, pine, or fir trees. It is identifiable from June to July.

There are nine known sites of this plant: three in Colorado; three in northwestern Montana, two in eastern Oregon; and one in Ferry County, Washington. A historical sighting (found in 1925, but not re-confirmed since then) was found in Bonner County (Township 63 North, Range 5 West, Section 2) about 14 airmiles north-northwest of project area.

## 3.9 Habitat within the Project Area

Topographically, the site is located in the Priest River watershed, a relatively mountainous area in the coniferous forest biome. Vegetation varies greatly in this area, being especially susceptible to changes in aspect, slope, topography and soils. The slightly sloping/benchy terrain of the proposed wastewater treatment site is generally underlain by moderately shallow, moderately permeable gravelly sandy loams. Elevations range from 2,550 feet at the proposed treatment site to the lake level at 2,438 feet.

### 3.9.1 Vegetation

In general, the dominant vegetation in the area is in the *Tsuga heterophylla* (western hemlock) series (Cooper et al. 1987). Appendix C lists all vascular and non-vascular plant species identified during the September and October 2001, and April 2002 field surveys.

At the proposed treatment site (Figure 3), roughly the west half consists of semi-logged coniferous forest (Moist Forest Guild) (see also Appendix D). Coniferous species include: Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), western white pine (*Pinus monticola*), and larch (*Larix occidentalis*). Many of these trees are saplings or young trees to about 30 feet tall. In the more open areas, the shrub layer is reasonably well-developed, being dominated by redroot (*Ceanothus sanguineus*), ocean spray (*Holodiscus discolor*), rose (*Rosa gymnocarpa*), thimbleberry (*Rubus parviflorus*), grouseberry (*Vaccinium scoparium*), and snowberry (*Symphoricarpos albus*), as well as low growing woody species: box (*Pachystima myrsinites*), Oregon grape (*Berberis repens*), twinflower (*Linnaea borealis*), and kinnikinnick (*Arctostaphylos uva-ursi*). Herbaceous species include both native species: strawberry (*Fragaria vesca* and *F. virginiana*), dry sedge (*Carex* spp.), pinegrass (*Calamagrostis rubescens*), pipsissewa (*Chimaphila umbellata*), wintergreen (*Gaultheria ovatifolia*), brackenfern (*Pteridium aquilinum*), needlegrass (*Stipa* sp.), goldenrod (*Solidago* sp.), violet (*Viola* sp.), and pyrola (*Pyrola asarifolia*); as well as non-native species typical of logged and otherwise disturbed areas: mullein (*Verbascum thapsus*), bentgrass (*Agrostis stolonifera*), thistles (*Cirsium arvense* and *C. vulgare*), knapweed (*Centaurea maculosa*), and toadflax (*Linaria dalmatica*).

The east half consists of minimally disturbed, mature evergreen coniferous forest. Identified also as belonging to the Moist Forest Guild, the dominant tree species is western hemlock, with some individuals attaining diameters-at-breast-height (DsBH) of greater than 24 inches and heights more than 80 feet (Appendix D, Photograph 2). Mature western white pines are also common in this area. Due to canopy cover, sparse undergrowth, and species regeneration, the forest would be classified as "old growth". Other species include grand fir, Douglas fir, and cedar over a very sparse groundcover layer. Woody shrubs are essentially lacking with sparse representation by Oregon grape, box, and twinflower. Herbs are sparse, but include pipsissewa, goldthread (*Coptis occidentalis*), bunchberry (*Cornus canadensis*), twinflower, Oregon grape, and violet. Moss (including *Plagiothecium* spp., *Polytrichum* spp., *Pleurozium schreberi*)and lichen (*Peltigera* spp., *Alectoria* spp., *Cladonia* spp., *Lobaria* spp) cover is high (Appendix C).

In the collection system portion of the project, the sewer pipes would be placed in the existing road ROW. Very little vegetation would have to be removed for the installation of the pipes, though some ruderal and native vegetation along the roadsides may need to be removed. Typical

vegetation in the residential and commercial areas is similar to the undisturbed forested areas, with the addition of typical roadside species.

### 3.9.2 Existing Wildlife Habitat

The coniferous forest areas (both disturbed and relatively undisturbed) would host an array of vertebrate wildlife species such as deer, bear, moose, elk, and bobcat. In addition, many passerine birds and small mammals would occupy most of the available habitat. Various raptors may frequent the forested and more open areas. Numerous snags are present in the old growth forests, providing habitat and refuge for woodpeckers. Evidence of activity by pileated woodpeckers was observed. However, the proximity of Reeder Bay Road (as it bisects the proposed treatment site) and human activities in the residential and commercial areas would probably considerably reduce the number of large game and non-game mammals that frequent the area.

### 3.9.3 Wetlands

There are no wetland areas or creeks at the proposed treatment site. Granite Creek flows from west to east across Reeder Bay Road (Figures 2 and 3). Several wetland areas were identified in the Elkins Resort area (extreme southern portion of the collection system). These included (1) a small ephemeral creek crossing Reeder Tracts Road, which flows into a swampy, initially well-braided forested area dominated by cedar; (2) a deciduous forested to scrub-shrub thicket with standing pools and ponds just near the entrance to Elkins Resort (Appendix D); and the (3) riparian system associated with Reeder Creek. These wetlands cross resort and/or residence access roads via culverts. They are located outside the actual roadway area.

## 4.0 SURVEY METHODS

I completed a field survey for wetlands, wildlife habitat, rare plant species, and vegetation descriptions on September 8 and October 24, 2001, and April 18, 19, 2002. The method of survey involved traversing (on foot) the roughly 80-acre proposed treatment facility site, and by car and foot, the collection system roadways and connection areas.

Observations of vegetation associations, species (age and vigor), habitat characteristics (snags, downed logs, and special microsites), stream areas (Granite and Reeder Creeks), and potential wetlands were made and noted. A comparison with existing on-site vegetation with that of known associated plant species and wildlife habitat was made. Other habitat information (including known surveys, conversations with experts and locals, literature reviews) was gathered for analysis of the listed species included in this BA.

For the federally-listed animal species, no specific surveys were made—but the entire project was surveyed for general habitat characteristics, including tracks, dens, snags, scat, and fur/hair.

## 5.0 ANALYSIS OF EFFECTS

### 5.1 General

In general, the vegetation which will be affected as a result of construction of the treatment facility, and collection systems includes second-growth forested coniferous vegetation, and disturbed roadside vegetation. Excavation for the lagoon and attendant facilities will occur in an area that has been logged (Appendix D, Photograph 1). The area needed for the open lagoon is 2 acres and the sprayfield is about 22 acres. All vegetation in the lagoon area would be removed; however, the sprayfield area would be maintained as a "tree plantation".

Areas to the west and east (Figure 3) are designated "old growth". Except for a roughly 20-foot wide easement along an existing undeveloped access road through which the collection system sewage will be directed west past Reeder Bay Road to the actual lagoon site, disturbance to these areas (such as land clearing or road building) is not part of the proposed water sewage treatment project.

All other piping installations (collection systems) would be located in the existing roadways - thus effects to vegetation includes only roadside (ruderal) species. These roadside areas are restorable—that is, after vegetation removal and construction is complete, these areas would be re-seeded with an erosion control mix. After time, native and typical roadside vegetation would re-colonize these easements. Thus, permanent vegetation impacts would total 6 acres. As the effluent used in the irrigation sprayfield is minimally treated but disinfected and would be applied at rates less than what the vegetation can use, it is not considered a permanent vegetation impact.

Treated sewage would be used as irrigation for a sprayfield (Section 2.4.2). The discharge would flow into the soil column and be utilized by the plants. There should be no excess water discharges which could affect surface waters nor would the discharge volumes be sufficient to enter the groundwater and adversely affect downslope vegetation, habitat, or domestic wells.

Other general effects can be summarized as temporal impacts related specifically to the period of construction: air quality (minimal impact—but present from heavy equipment use during construction), noise (heavy equipment use), human disturbance factor (increased activity during construction, including potential for trash, food, etc.), increased traffic (workers and equipment movement during construction), and potential for groundwater involvement, especially in trenching areas near the lakefront properties.

## 5.2 Gray Wolf

### 5.2.1 Direct Effects

The dominant construction activities will include the excavation for the lagoon and its attendant buildings, and the trenching for the collection system. The collection system activities will take place in an already disturbed environment (roadsides and sparse residential or commercial areas)—thus activities as a result of the proposed project will not add disturbances and noise much greater than what already exists (local logging, road repair, house construction, etc.). Thus no direct effects to wolf are anticipated as a result of these activities.

The lagoon itself will be fenced; the rest of the site will be left in essentially the same condition as it already exists. Thus after construction, only minimal additional human activities (maintenance) should occur as a result of this project.

This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the roads and logged forest will still be used/maintained as they are now), and there will be no significant effects on the wolf's prey base (loss of food source) or critical habitat (i.e., denning areas).

### 5.2.2 Indirect Effects

Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the gray wolf. Being fairly secretive, it is unlikely in the first place, that wolves would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the gray wolf's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

### 5.2.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Other activities such as logging, road construction, residential construction, hunting, hiking, and other recreational uses all affect potential occurrence of the gray wolf. Since quiet, remote habitats are dwindling, so are wolf packs. It is unlikely that gray wolf frequents areas within the project area limits, and cumulative effects of this project on this species are not as potentially destructive as some other types of activities (such as large scale logging or mining operations) that are more continual and far-ranging in their actions.

## 5.3 Selkirk Mountain woodland caribou

### 5.3.1 Direct Effects

There would be no direct effects to caribou or its habitat because the proposed actions are located outside the designated recovery area. Habitat effectiveness would not change from existing condition. There have been no sightings of caribou in or near the project area (Figure 5).

### 5.3.2 Indirect Effects

Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the caribou. Being more associated with higher elevation areas, it is unlikely that caribou would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the gray wolf's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

### 5.3.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Other activities such as logging, road construction, residential construction, hunting, hiking, and other recreational uses all affect potential occurrence of caribou. It is unlikely that caribou frequents areas within the project area limits, and cumulative effects of this project on this species are not as potentially destructive as some other types of activities (such as large scale logging or mining operations) that are more continual and far-ranging in their actions.

## 5.4 Bald Eagle

### 5.4.1 Direct Effects

Since the proposed project activities will take place mostly on access roads, in a logged forest area, and well away from known eagle nests, no direct effects on the nesting bald eagles will occur. There are no plans to remove any "potential" perch trees for wintering bald eagles. In addition, minor temporary construction-related disturbance to potential perching or roosting individuals in the project area could occur if the project is under construction during the wintering months (October to March).

These determinations are based on the fact that no substantial change in human-based activities in the project area will occur (activities are reduced to short-term temporary construction-related impacts), and there will be no significant effects on the eagle wintering food sources (fish in Granite and Reeder creeks and the lake), or nests.

5.4.2 Indirect Effects

Indirect effects such as water, noise, or air quality degradation can all affect potential wintering activities of the bald eagle. Since appropriate BMP's will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the bald eagle's continued existence. Since the project is a wastewater treatment facility, the potential for hazardous spills into either the open water bodies is not expected to occur. Otherwise water quality degradation could affect fish stocks (bald eagle prey base). Thus indirect effects that could adversely affect the species as a whole are unlikely.

5.4.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Since human intervention in the entire Priest Lake basin has occurred and is still occurring, any trees which could potentially serve as perch or roost trees that need to be removed for residential, commercial, or industrial use could affect individuals of the species.

## 5.5 Canada Lynx

5.5.1 Direct Effects

As in the effects analysis for gray wolf, the construction activities will take place in areas well away from any large areas of remote, quiet habitat. Thus no direct on the Canada lynx will occur. This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the access roads, rural residences, and the logged forest area will still be used as they are now, and there will be no significant effects on the lynx's prey base (loss of food source) or critical habitat (i.e., denning areas).

The construction activities will take place along existing disturbed access roads and in logged forest areas, well away from any large areas of remote, quiet habitat, no direct effects on the Canada lynx are anticipated.

These determinations are based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the access roads, golf course, and logged forest will still be used as they are now), and there will be no significant effects on the lynx's prey base (loss of food source) or critical habitat (i.e., denning areas).

5.5.2 Indirect Effects

Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the Canada lynx. Being fairly secretive, it is unlikely in the first place, that lynx would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the Canada lynx's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

5.5.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Other activities such as logging, road construction, residential construction, hunting, hiking, and other recreational uses all affect potential occurrence of the Canada lynx. Since quiet, remote habitats are dwindling, so are occurrences of lynx. It is unlikely that lynx frequent areas within the project area limits, and cumulative effects of this project on this species are not as potentially destructive as some other types of activities (such as large scale logging or mining operations) that are more continual and far-ranging in their actions.

## 5.6 Bull Trout

### 5.6.1 Direct Effects

Bull trout are known to occur in Priest Lake, migrate through Granite Creek (within the project area), and spawn in higher reaches of Granite Creek. No construction-related activities are proposed in the lake. Along Reeder Bay Road, Granite Creek will be crossed by hanging the sewer lines from the bridge—thus there should be no direct impacts to the Granite Creek fisheries, nor any channel or substrate modification that could adversely affect the bull trout. There are no bull trout reported in Reeder Creek (Davis pers. comm. 2002).

This determination is based on the fact that there will be no substantial change in the lake, or creek where bull trout are present. No impact to critical habitat (i.e., spawning areas) will occur.

### 5.6.2 Indirect Effects

Indirect effects such as water quality degradation can affect potential migration of the bull trout. Since appropriate BMP's will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the bull trout's continued existence. Since the project is a wastewater treatment facility, the potential for hazardous spills into Granite Creek or Priest Lake is not likely. Otherwise water quality degradation could affect fish. Thus indirect effects that could adversely affect the species as a whole are unlikely.

As the collection system pipe traverses Reeder Bay Road, it will be "hung" from the Granite Creek bridge—thus no direct or indirect impacts to bull trout are anticipated.

### 5.6.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Habitat degradation over the entire Priest Lake basin has occurred and is still occurring. Other activities such as logging and road construction all affect water quality into the river and streams in the area.

There are no construction-related impacts proposed that may affect the bull trout migration or feeding areas as a result of the wastewater treatment facility or collection system installation.

## 5.7 Grizzly bear

### 5.7.1 Direct Effects

The proposed project will not add disturbances and noise much greater than what already exists (local logging, road repair, house construction, etc.). Thus no direct effects to grizzly bear are anticipated as a result of these activities.

The lagoon itself will be fenced; the rest of the site will be left in essentially the same condition as it already exists. Thus after construction, only minimal additional human activities (maintenance) should occur as a result of this project.

This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the roads and logged forest will still be used/maintained as they are now), and there will be no significant effects on the bears' food source or critical habitat (i.e., denning areas). The Lakeshore BMU borders the northern portion of the proposed action area.

### 5.7.2 Indirect Effects

Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the grizzly bear. It is unlikely that during construction, grizzly would venture toward the project area from their "normal" remote habitat. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the grizzly bear's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely. Bears could potentially be interested in trash or refuse left by construction workers but this problem could be eliminated or reduced through proper education and instruction for the construction and maintenance crews.

### 5.7.3 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Other activities such as logging, road construction, residential construction, hunting, hiking, and other recreational uses all affect potential occurrence of the grizzly bear. Since quiet, remote habitats are dwindling, so are occurrences of bear. It is unlikely that grizzlies frequent areas within the project area limits, and cumulative effects of this project on this species are not as potentially destructive as some other types of activities (such as large scale logging or mining operations) that are more continual and far-ranging in their actions.

## 5.8 Ute ladies' tresses

### 5.8.1 Direct Effects

Habitat for Ute ladies' tresses does not appear to be present in the project area. The habitat is coniferous forest or disturbed roadside areas. As described in Section 3.4.2, the floodplain habitat and vegetation requirements for Ute ladies' tresses are quite specific.

SInce no habitat exists within or near the project area, there will be no direct, indirect or cumulative impacts on the Ute ladies' tresses.

## 5.9 Western yellow-billed Cuckoo

Since the few Idaho sightings have been much further south in Lewis County, and no deciduous riparian habitat with the specific characteristics for western yellow-billed cuckoo are present within the project area, it is unlikely that this bird occurs here. There is always a remote possibility that individuals could use the area as transients, however no nesting or breeding habitat is present within or near the project area. Thus direct, indirect, or cumulative impacts to the cuckoo as a result of this project are not likely.

## 5.10 Slender moonwort

There has been only one historical sighting of slender moonwort in northern Idaho. As described in Section 3.8.2, it is located about 14 airmiles northwest of the project area. While it is possible that individuals may be present in woods surrounding the Priest Lake area - it has not been re-located since 1925. No direct impacts are anticipated—however it may be prudent to perform field surveys during its identification period (July to August) to ascertain its presence or absence.

## 6.0 DETERMINATION

Under the General Section 7 Consultation process: the choices for determination of effects to listed species are: (1) no effect; (2) may affect, not likely to adversely effect; (3) may affect, likely to adversely effect; and (4) likely to jeopardize/adversely modify critical habitat. If the USFWS concurs with the findings presented in this document, effect determination #1 requires no action on the part of the USFWS; effect determination #2 requires written concurrence from the USFWS; and formal Section 7 consultation with the USFWS is required for the effect determinations #3 and #4 (USFWS 1993a). For candidate or proposed species, the effects determinations are: (1) no jeopardy, and (2) jeopardy (conference with FWS is required for jeopardy determinations).

The Effects Determinations shown in Table 1 are based on my experience, fieldwork, and the discussions above. Thus it is my opinion and finding that the proposed Granite Reeder Sewage Treatment Project will have little to no effects on the federally listed species discussed in this document.

**Table 1**
**Effects Determinations for Federally Listed and Candidate Species**

| Listed Species | Effect Determination |
|---|---|
| Gray Wolf | may affect, not likely to adversely effect |
| Selkirk Mountain woodland caribou | may affect, not likely to adversely effect |
| Bald Eagle | may affect, not likely to adversely effect |
| Canada Lynx | may affect, not likely to adversely effect |
| Bull Trout | may affect, not likely to adversely effect |
| Grizzly Bear | may affect, not likely to adversely effect |
| Ute ladies' tresses | no effect |
| **Candidate Species** | |
| Western yellow-billed Cuckoo | no jeopardy |
| Slender Moonwort | no jeopardy* |

* surveys for this species may change this determination

## 7.0 ACTIONS TAKEN TO PROMOTE RECOVERY AND CONSERVATION OF THE SPECIES

Since a "no effect" determination for Ute ladies' tresses has been presented, no mitigation action is considered for this species. "May affect, but not likely to adversely effect" determinations were brought forth for gray wolf, caribou, bald eagle, bull trout, grizzly bear, and Canada lynx. However, since the likelihood of any effect of this project on gray wolf, caribou, grizzly bear, or Canada lynx, is extremely remote, no mitigating actions (aside from the assurance that overall watershed water quality is not compromised; trash and debris removed; and education on habits of the listed species) are presented for these species in this document. Since bald eagles and bull trout are known to use the physical space that would be considered within the project area, some mitigating actions to promote continued recovery and conservation of the species may be prudent.

### 7.1 Bald Eagle

Potential disturbance to wintering bald eagles could be mitigated by implementing the wastewater treatment facility construction work outside the wintering months (October 31 to March 31). Since this is the snow season, construction would likely be undertaken during the summer months, and avoid the winter months. However, if it is necessary for construction to occur within this "window", it may be prudent to have a qualified biologist monitor presence/activities of bald eagle in the area during construction. Should construction activities appear to significantly disrupt feeding habits of eagles, then consultation with USFWS staff may be prudent to determine alternate timing of work, or modification of the type of disturbance.

### 7.2 Bull Trout

As discussed in Section 3.5.3, seasonal migrations upstream to known spawning grounds in the upper reaches of Granite Creek occur on an annual basis, and it is likely that this occurs in fall as the water temperatures drop. There are no proposals to take any action within Granite or Reeder creeks or Priest Lake. Indirect effects to bull trout in Priest Lake could occur if there is some unexpected sewage discharge from a broken pipe or other disaster involving the collection system. If excess discharge or sewage lagoon failure would occur, it is possible that incompletely-treated sewage could be transported downstream into the vicinity of the lake. Depending on this hypothetical type of emergency, it cannot be determined if the lake would be affected by surface or subsurface flow. However, the likelihood of such a failure is highly improbable.

Since the collection system would cross Granite Creek along the existing bridge on Reeder Bay road, there could be indirect effects on water quality of the creek only if there were pipe failure. This event, too, is unlikely (Welch Comer pers. comm. 2002). Should any disaster or failure occur, the proper authorities including the FWS and DEQ would be immediately alerted, and remediative action taken in consult with the permitting agencies.

## 8.0 SUMMARY

The Granite Reeder Sewage Treatment project will involve installation of a collection system for residential and commercial sewage and wastewater and the construction of a primary treatment sewage lagoon coupled with attendant maintenance facilities and a sprayfield. The purpose of the project is replace the individual existing (or non-existing) sewage facilities with a central treatment facility thus providing a larger margin of safety for water sources (wells) as well as downstream habitats from overall water quality degradation in the watershed.

The proposed project would not affect the **Ute ladies' tresses**. Ute ladies' tresses would not be affected because it or suitable habitat for its occurrence are not present in the project area.

The proposed project would not be likely to adversely affect the gray wolf, woodland caribou, bald eagle, bull trout, grizzly bear, or Canada lynx. **Gray wolf, woodland caribou, grizzly bear, and Canada lynx** would not be adversely affected because (1) the project would not alter or adversely affect available habitat; (2) the species is unlikely to occur near or within the project area; (3) the project does not constitute a "migration" barrier; and (4) the project does not affect existing habitat nor the prey base (or food source). **Bull trout** would not be adversely affected because (1) the project would not alter or adversely affect available habitat; (2) the species uses the rivers solely for feeding and migration; (3) the project does not include a "migration" barrier or channel alteration; and (4) the project will not affect existing habitat nor the prey base.

Feeding **wintering bald eagles** could potentially be disrupted by the noise from construction activities: mitigation through avoidance of construction during bald eagle wintering months (October to March) is presented in this document as a potential (but not required) recommendation. Monitoring would be required depending on the actual construction window.

Water quality which is important to **bull trout** could be compromised only if there were pipe failure. Should any disaster or failure occur, the proper authorities including the FWS and DEQ would be immediately alerted, and remediative action taken in consult with the permitting agencies.

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# United States Department of the Interior

FISH AND WILDLIFE SERVICE
*Upper Columbia Fish and Wildlife Office*
*11103 East Montgomery Drive*
*Spokane, Washington 99206*

March 20, 2002

Mr. Tom Duebendorfer
P.O. Box 167
Elmira, ID 83865

Subject: Species List for the Proposed Granite-Reeder Water Treatment Facilities Project, Bonner County, Idaho (File # 970.0900)

Reference Number: 1-9-01-SP-704

Dear Mr. Duebendorfer:

This responds to your September 6, 2001 request for a list of threatened and endangered species that may occur in the vicinity of the Proposed Granite-Reeder Water Treatment Facilities Project, Bonner County, Idaho. We understand that the project involves the construction of a water treatment facility for the Granite-Reeder Bay area. Please use the above reference number for all future correspondence regarding this project.

We have reviewed the information you provided. Our records indicate that the following listed and candidate species may occur in the vicinity of the project and could potentially be affected by it:

**Listed Species**

Endangered
Gray wolf *(Canis lupus)*
Selkirk Mountains woodland caribou *(Rangifer tarandus caribou)*

Threatened

Bald eagle *(Haliaeetus leucocephalus)*
Canada lynx *(Lynx canadensis)*
Bull trout *(Salvelinus confluentus)*
Grizzly bear *(Ursus arctos)*
Ute ladies'- tresses *(Spiranthes diluvialis)*

**Candidate Species**

Western yellow-billed cuckoo (*Coccyzus americanus*)
Slender moonwort (*Botrychium lineare*)

If there is federal agency involvement in this project (funding, authorization, or other action), the involved federal agency must meet its responsibilities under section 7 of the Endangered Species Act of 1973, as amended (Act), as outlined in Enclosure A. Enclosure A includes a discussion of the contents of a Biological Assessment (BA), which provides an analysis of the impacts of the project on listed and proposed species, and designated and proposed critical habitat. Preparation of a BA is required for all major construction projects. Even if a BA is not prepared, potential project effects on listed and proposed species should be addressed in the environmental review for this project. Federal agencies may designate, in writing, a non-federal representative to prepare a BA. However, the involved federal agency retains responsibility for the BA, its adequacy, and ultimate compliance with section 7 of the Act.

Preparation of a BA would be prudent when listed or proposed species, or designated or proposed critical habitat, occur within the project area. Should the BA determine that a listed species is likely to be affected by the project, the involved federal agency should request section 7 consultation with the U.S. Fish and Wildlife Service (Service). If a proposed species is likely to be jeopardized by the project, regulations require conferencing between the involved federal agency and the Service. If the BA concludes that the project will have no effect on any listed or proposed species, we would appreciate receiving a copy for our information.

Candidate species receive no protection under the Act, but are included for your use during planning of the project. Candidate species could be formally proposed and listed during project planning, thereby falling within the scope of section 7 of the Act. Protection provided to these species now may preclude possible listing in the future. If evaluation of the subject project indicates that it is likely to adversely impact a candidate species, we encourage you to modify the project to minimize/avoid these impacts.

If there is no federal agency involvement in your project, and you determine that it may negatively impact a listed or proposed species, you may contact us regarding the potential need for permitting your actions under section 10 of the Act.

If you would like information concerning state listed species or species of concern, you may contact the Idaho Department of Fish and Game, at (208) 334-3402.

This letter fulfills the requirements of the Service under section 7 of the Act. Should the project plans change significantly, or if the project is delayed more than 90 days, you should request an update to this response.

Thank you for your efforts to protect our nation's species and their habitats. If you have any questions concerning the above information, please contact Robert Newman at (509) 893-8017.

Sincerely,

Suzanne Audet

For Supervisor

Enclosure

cc: IDFG, Coeur d'Alene

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Comments on Animal(s) | Comments on Habitat |
|---|---|---|---|---|---|---|---|---|---|---|
| Bald Eagle | Sighting | 1/11/91 | 61N | 4W | 16 | | | 1 | Resident bird observed at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/93 | 61N | 4W | 16 | SW | NE | 1 | Adult eagle flying just south of Granite Creek outlet. Observation occurred at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/10/93 | 61N | 4W | 4 | SW | | 1 | Adult perched on tree by shoreline near Lakeshore Trail just south of Twin Island.<br>1630 hours | |
| Bald Eagle | Sighting | 11/19/00 | 61N | 4W | 9 | | | 1 | Individual flew back and forth over lake in a north to south direction between relatively distant locations. Sighting occurred just south of the western Twin Island. | |
| Bald Eagle | Sighting | 12/12/00 | 61N | 4W | 20 | | | 1 | Perched in tree along shoreline at Ledgewood Picnic area, took flight shortly after my arrival. | |
| Bald Eagle | Sighting | 1/19/01 | 61N | 4W | 16 | | | 1 | Mouth of Granite Creek station, annual Bald Eagle survey, one adult flying over lake. | |
| Bald Eagle | Sighting | 2/11/01 | 61N | 4W | 5 | NE | | 2 | Two adults appeared to be feeding on something on the ice cover of Distillery Bay, two ravens in attendance, one eagle still had white on the midline of the wing, also saw one male Goldeneye with three females, one female merganser, and a pair of Horned G | |
| Bald Eagle | Sighting | 1/13/00 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/13/00 | 61N | 4W | 20 | | | 1 | One adult seen at Reeder Bay Campground station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/99 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/99 | 61N | 4W | 20 | | | 1 | One adult seen at Reeder Bay Capground station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/9/98 | 61N | 4W | 28 | SE | | 1 | One adult seen at Indian Creek Bay Northwest Edge along Pinto Point station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/12/96 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 11/8/96 | 61N | 5W | 12 | NW | NE | 1 | The eagle flew overhead from west to east near Watson Mountain | Mature saw timber, southwest aspect. |
| Bald Eagle | Sighting | 11/8/96 | 61N | 5W | 27 | NE | SW | 1 | In Bismark Meadow with ravens; possibly on deer carcass. | meadow |
| Bald Eagle | Sighting | 10/2/94 | 61N | 5W | 22 | NE | SW | 1 | Perched in a tree in Bismark Meadow. | meadow |
| Bald Eagle | Sighting | 6/18/83 | 61N | 5W | 14 | SW | | ? | [data entry note: no information on hardcopy for number of animals] | |
| Bald Eagle | Sighting | 4/20/83 | 61N | 5W | 14 | SW | SW | 2 | | |
| Bald Eagle | Sighting | 1/21/80 | 61N | 5W | 25 | SW | | 1 | Seen flying. | |
| Bald Eagle | Sighting | 4/7/92 | 61N | 5W | 23 | SW | SW | 1 | One adult soaring then landing in a tree near Highway 57 in front of Al Austin's house. Appeared to be watching four crows eating something alongside the highway. | |
| Bald Eagle | Sighting | 4/27/00 | 61N | 5W | 27 | NW | | 2 juveniles | Two, almost fully mature, eagles were feeding off a carcass in meadow surrounded by "anxious" ravens. | open meadow (Bismark Meadow) |
| Bald Eagle | Sighting | 4/30/00 | 61N | 5W | 22 | SE | | 2 | Two eagles were on the ground in the meadow approx. 150 yards from Highway 57 along with what I guessed was a Turkey Vulture (large bird). The eagles were identifiable when they "flared" their wings towards each other. | open meadow (Bismark Meadows) |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Comments on Animal(s) | Comments on Habitat |
|---|---|---|---|---|---|---|---|---|---|---|
| Bald Eagle | Sighting | 4/16/00 | 61N | 5W | 27 | | | 1 | The eagle was perched in a cottonwood at the edge of Highway 57 and the meadow. | Bismark Meadow |
| Bald Eagle | Sighting | 9/11/00 | 61N | 5W | 0 | | | 1 juvenile | Immature eagle was in roadside tree next to Bismark Meadows. Observer was in vehicle traveling along Highway 57 at approx. 0900 hours. | Bismark Meadows |
| Bald Eagle | Sighting | 4/7/92 | 61N | 5W | 23 | SW | SW | 1 | Eagle was soaring near Highway 57 in front of Al Austin's house. It then landed in a tall pine tree and seemed to be observing four crows eating something alongside the highway. approx. 1210 hours | |
| Bald Eagle | Sighting | 5/3/91 | 61N | 5W | 27 | SW | SE | 2 | Adult eagles chasing ravens away from carcass in Bismark Meadow at approx. 0700 hours. | |
| Bald Eagle | Sighting | 11/14/91 | 61N | 5W | 16 | SW | SW | 1 | One adult perched in timber near FR 2516 at approx. 1115 hours. | |
| Bald Eagle | Sighting | 9/30/96 | 62N | 4W | 9 | SE | NE | 1 | Juvenile on dead branch of WP on shore at Schreiber's. | |
| Bald Eagle | Sighting | 9/24/95 | 62N | 4W | 4 | | | 1 | Immature eagle perched on snag in Thorofare near the osprey nest north of Caribou Creek. | |
| Bald Eagle | Sighting | 5/21/94 | 62N | 4W | 9 | | | 1 | Immature eagle in cottonwood, harrassed by ravens. | |
| Bald Eagle | Sighting | 12/18/92 | 62N | 4W | 27 | NW | SE | 1 | One adult sitting on large dead tree by houses. Card has specific directions. Approx. 1300 hours | |
| Bald Eagle | Sighting | 5/24/92 | 62N | 4W | 10 | NW | | 2 | One adult and one immature. Adult perched in large cottonwood on west end of breakwater. Immature was flying over the end of the lake out of Mosquito Bay. Approx. 0600 and 1100 hours. | |
| Bald Eagle | Sighting | 5/23/93 | 62N | 4W | 9 | NE | SW | 1 | Adult flying northeast fromThorofare with fish. | |
| Bald Eagle | Sighting | 4/30/94 | 62N | 4W | 4 | | | 1 | Immature flying south above Thorofare just north of Caribou Creek. | |
| Bald or Golden Eagle | Sighting | 4/8/96 | 61N | 5W | 27 | NE | SW | 1 | Along Highway 57, eagle was perched in large WL observing crows on carrion. | |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caribou | Sighting | 7/4/99 | 61N | 4W | 0 | | | 1 | | Possible male with collar and green tag seen approx. two miles south of Indian Creek on the east side Lakeshore Road. | | Medium |
| Caribou | Hair | 6/11/97 | 61N | 5W | 23 | SW | | 1 | | Large clump of hair scraped off by animal rubbing against fallen trees. | Mixed forest, areas of timber harvest. | High |
| Caribou | Sighting | 5/3/89 | 62N | 4W | 9 | NW | | 1 | | Collared animal seen on shore while boating up the Thorofare. | near shrubfield/meadow | |
| | | | | | | | | | | | | |
| Grizzly Bear | Sighting | 10/25/95 | 61N | 5W | 14 | SW | | 1 | | Blond, grizzled hair, very large front shoulder hump, round dish-shaped face, behind Nordman store. | | |
| Grizzly Bear | Sighting | 7/9/90 | 62N | 4W | 32 | NW | NW | 1 | | | | |
| Grizzly Bear | track and scat | 8/31/99 | 62N | 5W | 17 | | | 1 | | | Mixed conifer and meadow mosaic. | High |
| Grizzly Bear | Track | 8/18/00 | 62N | 5W | 14 | NW | SE | 1 | | Tracks were in the middle of FR 1341. Observers were following up on a report of a Grizzly Bear in the area. [data entry note: section information may be incorrect because FR 1341 does not pass through this section] | | |
| Lynx | Sighting | 10/7/91 | 61N | 4W | 5 | NE | SW | 1 | | Biological Tech Lynx stood in road 2512 for ten seconds and then ran off into the timber. | | Medium |
| Lynx | Track | 3/20/97 | 61N | 5W | 17 | NW | NW | 1 | | Biologist Track set seen along road 1362 at stream crossing during snow track survey. | | High |
| Lynx | kill | 11/15/92 | 61N | 5W | 20 | NE | | 1 | | Animal taken with trap. | | High |
| Lynx | Sighting | 1/25/79 | 61N | 5W | 0 | | | 2 | | Biologist Observed during a winter survey for T& E species (Koehler & Hornocker 1979). [data entry note: township information on hardcopy is "60/61N"] | | High |
| Lynx | Sighting | 9/21/98 | 62N | 5W | 19 | | | 1 | | Recreation forester. Long legs and light coloration, cat ran across the road at approx. 2025 hours, near 8 mile marker on FR 302. | | Medium |
| Lynx | Sighting | 8/15/90 | 62N | 5W | 19 | SW | SW | 1 | | Forestry Tech It was crossing road 302 approximately one mile north of its junction with road 311. | Immature to mature THPL/TSHE forest | Medium |
| Wolf | Sighting/Tracks | 1/15/94 | 61N | 4W | 20 | | | 1 | | Animal observed 20 feet out kitchen window on slope beside house, saw tracks around house and heard howling. | White-tail Deer winter range, open south slope | |
| Wolf | Sighting | 7/21/90 | 61N | 4W | 21 | SW | | 2 | | Animals paralled observer for approx. 1/2 mile, arge, brownish, 32 in. in length, Cape Horn area. | | |
| Wolf | Sighting | 9/14/98 | 61N | 5W | 24 | NW | NW | 1 | | Seen near home 3/4 mile up Reeder Bay Road from Nordman. | | Low |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wolf | Sighting | 7/15/98 | 61N | 5W | 23 | SW | | 1 | | Large animal, gray, seen along edge of property. | | |
| Wolf | Sighting | 9/23/91 | 61N | 5W | 12 | | | 1 | | Driveway to Turner/Moore's, approx. 100 yards in, west side of road by new cabin on left. | | |
| Wolf | Sighting | 8/18/85 | 61N | 5W | 23 | NW | | 1 | | Possible sighting, may have mistaken domestic dog for wolf. | Bismark meadows - wetland/grassland comlex. | |
| Wolf | Sighting/Tracks | 1/29/97 | 62N | 4W | 25 | SW | | 1 | 4 inches wide and 5 to 5.5 inches long, distinct claws | Extremely large animal with a large blocky head, yellowish color on sides, silver-gray on backside, tracks also seen, 30 second observation at a distance of 50 feet | riparian corridor | |
| Wolf | Sighting | 12/28/85 | 62N | 4W | 16 | | | 3 | | Two larger animals, third smaller and subservient/compliant. Two days later, deer carcass and tracks in area. | On frozen ice (approx. 24 inches thick) | |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Trees | *Abies grandis* | grandfir |
| | *Betula papyrifera* | paper birch |
| | *Larix occidentalis* | western larch |
| | *Picea engelmannii* | Englemann spruce |
| | *Pinus contorta* | lodgepole pine |
| | *Pinus monticola* | western white pine |
| | *Populus balsamifera* | black cottonwood |
| | *Pseudotsuga menziesii* | Douglas fir |
| | *Thuja plicata* | western red cedar |
| | *Tsuga heterophylla* | western hemlock |
| Shrubs | *Acer glabrum* | Rocky Mountain maple |
| | *Alnus incana* var *tenuifolia* | white alder |
| | *Amelanchier alnifolia* | serviceberry |
| | *Arctostaphylos uva-ursi* | kinnikinnick |
| | *Berberis repens* | Oregon grape |
| | *Ceanothus sanguineus* | redroot |
| | *Cornus sericea* ( = *C. stolonifera*) | redstem dogwood |
| | *Crataegus douglasii* var. *douglasii* | hawthorn |
| | *Gaultheria ovatifolia* | wintergreen |
| | *Holodiscus discolor* | ocean spray |
| | *Linnaea borealis* | twinflower |
| | *Lonicera involucrata* | honeysuckle |
| | *Pachistima myrsinites* | myrtle boxwood |
| | *Philadelphus lewisii* | mock orange |
| | *Rosa gymnocarpa* | baldhip rose |
| | *Rosa nutkana* | Nootka rose |
| | *Rosa woodsii* | Woods' rose |
| | *Rubus idaeus* var *peramoenus* | raspberry |
| | *Rubus leucodermis* | blackcap |
| | *Rubus parviflorus* | thimbleberry |
| | *Rubus vitifolius* | trailing blackberry |
| | *Salix lasiandra* | Pacific willow |
| | *Salix scouleriana* | Scouler willow |
| | *Spiraea betulifolia* | spirea |
| | *Spiraea douglasii* | hardhack |
| | *Symphoricarpos albus* | snowberry |
| | *Vaccinium globulare* | huckleberry |
| | *Vaccinium membranaceum* | huckleberry |
| | *Vaccinium caepitosum* | dwarf huckleberry |
| | *Vaccinium scoparium* | grouseberry |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Achillea millefolium* | yarrow |
| | *Agropyron repens* | quackgrass |
| | *Agrostis alba* (=*A. gigantea*) | redtop bentgrass |
| | *Agrostis scabra* | rough bentgrass |
| | *Agrostis stolonifera* | redtop bentgrass |
| | *Agrostis stolonifera* (var. *palustris*) | redtop bentgrass |
| | *Alopecurus pratensis* | meadow foxtail |
| | *Anaphalis margaritacea* | pearly everlasting |
| | *Angelica* sp. (?) | angelica |
| | *Antennaria racemosa* | everlasting |
| | *Apocynum androsaemifolium* | spreading dogbane |
| | *Aralia nudicaulis* | sarsaparilla |
| | *Asarum caudatum* | wild ginger |
| | *Bellis perennis* | English daisy |
| | *Calamagrostis rubescens* | pinegrass |
| | *Carex deweyana* (?) | Dewey's sedge |
| | *Carex pachystachya* | sedge |
| | *Carex scirpoidea* (?) | single spike sedge |
| | *Centaurea diffusa* | diffuse knapweed |
| | *Centaurea maculosa* | spotted knapweed |
| | *Cerastium arvense* | mouse-eared chickweed |
| | *Cerastium vulgatum* | chickweed |
| | *Chimaphila menziesii* | pipsissewa |
| | *Chimaphila umbellata* | pipsissewa |
| | *Chrysanthemum leucanthemum* | ox-eye daisy |
| | *Cirsium arvense* | Canada thistle |
| | *Cirsium vulgare* | bull thistle |
| | *Claytonia sibirica* | Siberian springbeauty |
| | *Clintonia uniflora* | queencup bead lily |
| | *Collomia grandiflora* | collomia |
| | *Coptis occidentalis* | gold-thread |
| | *Corallorhiza striata* | coralroot |
| | *Conyza canadensis* | horseweed |
| | *Cornus canadensis* | bunchberry |
| | *Dactylis glomerata* | orchardgrass |
| | *Danthonia spicata* | oatgrass |
| | *Deschampsia elongata* | slender hairgrass |
| | *Elymus glaucus* | wildrye |
| | *Epilobium angustifolium* | fireweed |
| | *Epilobium ciliatum* | willow herb |
| | *Epilobium minutum/paniculatum* | willow herb |
| | *Equisetum arvense* | field horsetail |
| | *Equisetum hyemale* | rough scouring rush |
| | *Festuca arundinacea* | tall fescue |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Festuca idahoensis* | Idaho fescue |
| | *Festuca pratensis* | meadow fescue |
| | *Festuca rubra* | red fescue |
| | *Fragaria vesca* | wild strawberry |
| | *Fragaria virginiana* | wild strawberry |
| | *Galium aparine* | catchweed bedstraw |
| | *Geum macrophyllum* | large-leaved avens |
| | *Gnaphalium chilense* | cudweed |
| | *Gnaphalium microcephalum* | cudweed |
| | *Gnaphalium palustris* | cudweed |
| | *Goodyera oblongifolia* | rattlesnake plantain |
| | *Hieracium albertinum* | hawkweed |
| | *Holcus lanatus* | velvetgrass |
| | *Hypericum perforatum* | St. John's wort |
| | *Juncus acuminatus* | rush |
| | *Juncus bufonius* | toadrush |
| | *Juncus effusus* | soft rush |
| | *Juncus tenuis* | slender rush |
| | *Lilium columbianum* | tiger lily |
| | *Linaria dalmatica* | toadflax |
| | *Lysichitum americanum* | skunk cabbage |
| | *Madia glomerata* | mountain tarweed |
| | *Melilotus alba* | white sweet clover |
| | *Mentha arvensis* | field mint |
| | *Oenothera biennis* | evening primrose |
| | *Phalaris arundinacea* | reed canarygrass |
| | *Phleum pratense* | common timothy |
| | *Plantago lanceolata* | common plantain |
| | *Plantago major* | English plantain |
| | *Poa annua* | annual bluegrass |
| | *Poa compressa* | Canada bluegrass |
| | *Poa pratensis* | Kentucky bluegrass |
| | *Poa trivialis* | roughstem bluegrass |
| | *Potentilla gracilis* | cinquefoil |
| | *Prunella vulgaris* | self heal |
| | *Pteridium aquilinum* | bracken fern |
| | *Pterospora andromedea* | pinedrops |
| | *Pyrola asarifolia* | common pink wintergreen |
| | *Pyrola picta* | wintergreen |
| | *Ranunculus repens* | creeping buttercup |
| | *Rumex acetosella* | sheep sorrel |
| | *Rumex crispus* | curly dock |
| | *Smilacina stellata* | star Solomon's seal |
| | *Solanum dulcamara* | nightshade |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Solidago elongata/gigantea* | goldenrod |
| | *Stipa occidentalis* (?) | needlegrass |
| | *Tanacetum vulgare* | tansy |
| | *Taraxacum officinale* | common dandelion |
| | *Tiarella trifoliata* | coolwort foamflower |
| | *Triflium agrarium* | clover |
| | *Trifolium dubium* | suckling clover |
| | *Trifolium pratense* | red clover |
| | *Trifolium repens* | white clover |
| | *Trillium ovatum* | trillium |
| | *Typha latifolia* | cattail |
| | *Urtica dioica* | stinging nettle |
| | *Verbascum thapsus* | common mullein |
| | *Veronica americana* | American brooklime |
| | *Veronica officinalis* | common speedwell |
| | *Vicia americana* var *truncata* | American vetch |
| | *Vicia hirsuta* | hairy vetch |
| | *Viola orbiculata* | round-leaved violet |
| | *Xerophyllum tenax* | beargrass |
| Ferns | *Athyrium felix-femina* | ladyfern |
| | *Polystichum munitum* | sword fern |
| Mosses | *Polytrichum* spp | |
| | *Plagiothecum undulatum* | |
| | *Pleurozobium schreberi* | |
| | *Rhytidiopsisrobusta* | |
| Lichens | *Alectoria sarmentosa* | |
| | *Cladonia chlorophaea* | |
| | *Cladonia cornuta* | |
| | *Cladonia fimbriata* | |
| | *Cladonia pyxidata* | |
| | *Lobaria hallii* | |
| | *Peltigera aphthosa/britannica* | |
| | *Peltigera neopolydactyla* | |
| | *Peltigera praetextata* | |
| | *Peltigera venosa* | |

# APPENDIX D

## Photographs (4/02)

Photo 1: View into lagoon site area. Vegetation is cut timber with shrubs

Photo 2: View into "old growth" area south of Reeder Bay Rd at sewage lagoon site. No impacts are proposed for this area. Vegetation is uncut mature timber with very little shrubs.

Photo 3: View south into Granite Creek. Sewer line to be hung from Reeder Bay Road bridge.

Photo 4: View into wetland west of Elkins Rd near Elkins resort. Vegetation is alder, willow, and open water patches.

Photo 5: As in Photo 4. Different view. No impacts are proposed in this wetland.

WELCH COMER
& ASSOCIATES, INC.
ENGINEERS SURVEYORS

# APPENDIX 13.7
# Biological Evaluation
# by Tom Duebendorfer

# BIOLOGICAL EVALUATION

## US Forest Service Threatened, Endangered, and Sensitive Species

## for the

## Granite-Reeder Water and Sewer District
## Wastewater System Improvements

## Bonner County, Idaho

Report submitted to:

**Welch-Comer and Associates, Inc.**

1626 Lincoln Way
Coeur d'Alene, ID 83814

On behalf of:
**Granite Reeder Water and Sewer District**
Nordman, ID

Prepared by:


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**DRAFT**
June 3, 2002

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## Figures



## Tables

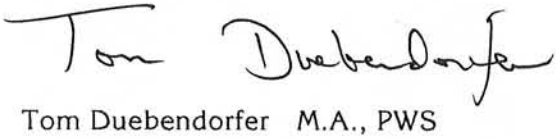


## Appendices

## *Report Preface*

This Biological Evaluation (BE) has been prepared for use by Welch Comer and Associates, the US Forest Service, the Granite Reeder Water and Sewer District, and their agents. I am qualified to analyze terrestrial and wetland ecosystems. I have 21 years experience in assessing Northwest province ecosystems. I have used the site information and proposed plans as referenced herein. The findings in this report are based on information gathered in the field at the time of investigation and my understanding of the federal, state, and local regulations governing species protection. Prior to construction, all appropriate regulatory agencies should be contacted to concur with the findings of this report and to obtain appropriate approvals and permits.

The BE and effects determinations are presented using thorough application of my knowledge and experience, correspondence with regional experts, and best professional judgment based on the circumstances and site conditions at the time of the study. The final effects determinations are made by the appropriate federal, state, and local jurisdiction. I have provided professional services in accordance with the degree of care and skill generally accepted in the nature of the work performed.



Tom Duebendorfer M.A., PWS
Wetland Scientist/Biologist/Botanist

## 1.0 INTRODUCTION

The Granite Reeder Water and Sewer District (District) authorized Welch, Comer and Associates to prepare an Environmental Assessment ("EA") for the Granite Reeder Water and Sewer District Wastewater System Improvements Project. The District has obtained a grant from the Idaho Department of Environmental Quality (DEQ) to prepare a facilities plan for wastewater collection and treatment. The purpose of that report (Welch Comer 2002) is to develop and evaluate alternatives on the basis of suitability, environmental impacts, cost and maintenance.

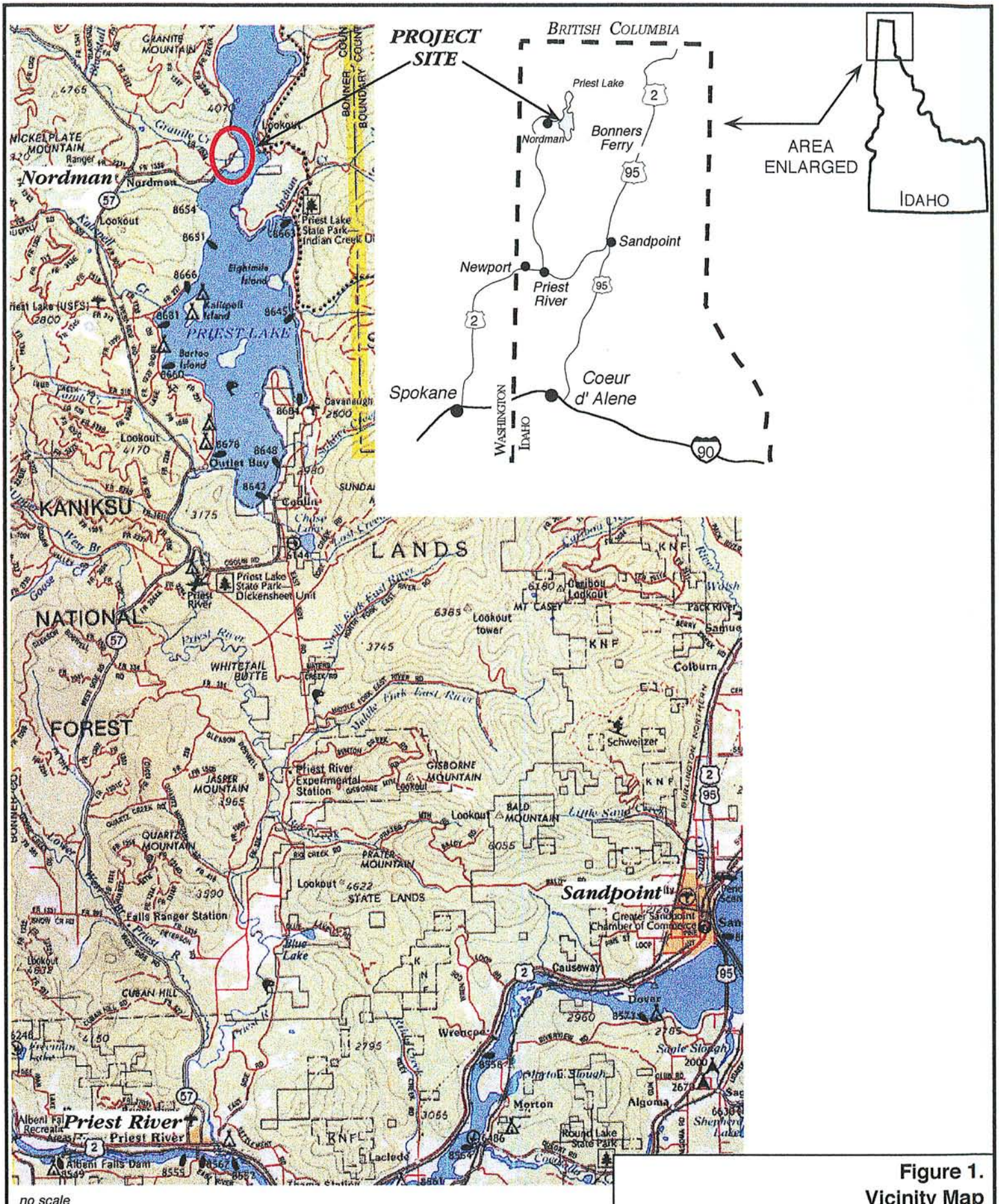
Since the majority of the funding arises from federal sources (an Environmental Protection Agency [EPA] grant), and the project encompasses some lands administered by the US Forest Service (USFS), a Biological Evaluation (BE) for this project is required by the USFS. Based on lists supplied by the Priest Lake Ranger District of the Idaho Panhandle National Forest (IPNF) staff, this Biological Evaluation specifically addresses potential occurrence of, and impacts to eighteen animal species, 59 plant species, and 6 fish species listed endangered, threatened, or sensitive.

Under provisions of the Endangered Species Act (ESA), federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any endangered, threatened, and proposed species known to or occur in the project area.

## 2.0 PROPOSED ACTION AND ACTION AREA

### 2.1. EXISTING FACILITIES

The Granite Creek-Reeder Bay area (Granite Reeder) is herein defined as the area generally located between Reeder Bay Road (also known as Reeder Creek Road) and Reeder Bay on the western shore of Priest Lake in northern Idaho (Township 61 North, Range 4 West, portions of Sections 9, 16, 17, and 20, B.M., Figures 1 and 2). Elevations range from 2,550 feet at the proposed treatment site to the lake level at 2,438 feet. The District includes both residential and commercial users. Granite Reeder does not currently have a community sewer collection or disposal system, so individual residences as well as commercial establishments utilize their own on-site sewer disposal systems, which vary widely in range from septic tanks with small drain fields to cesspools. Many of the lots are small and some lots contain a primary residence and a guest home. Due to the close proximity of homes, many of these individual on-site systems do not meet DEQ or Panhandle Health Department (PHD) guidelines and pose a health risk to residents and local surface and ground water quality. The USFS administers lands in Section 17 (the proposed treatment site) and portions of Section 20 (near the lake) and near the Elkins Resort (portion of Section 19) where Reeder Creek enters the lake (Figure 2).

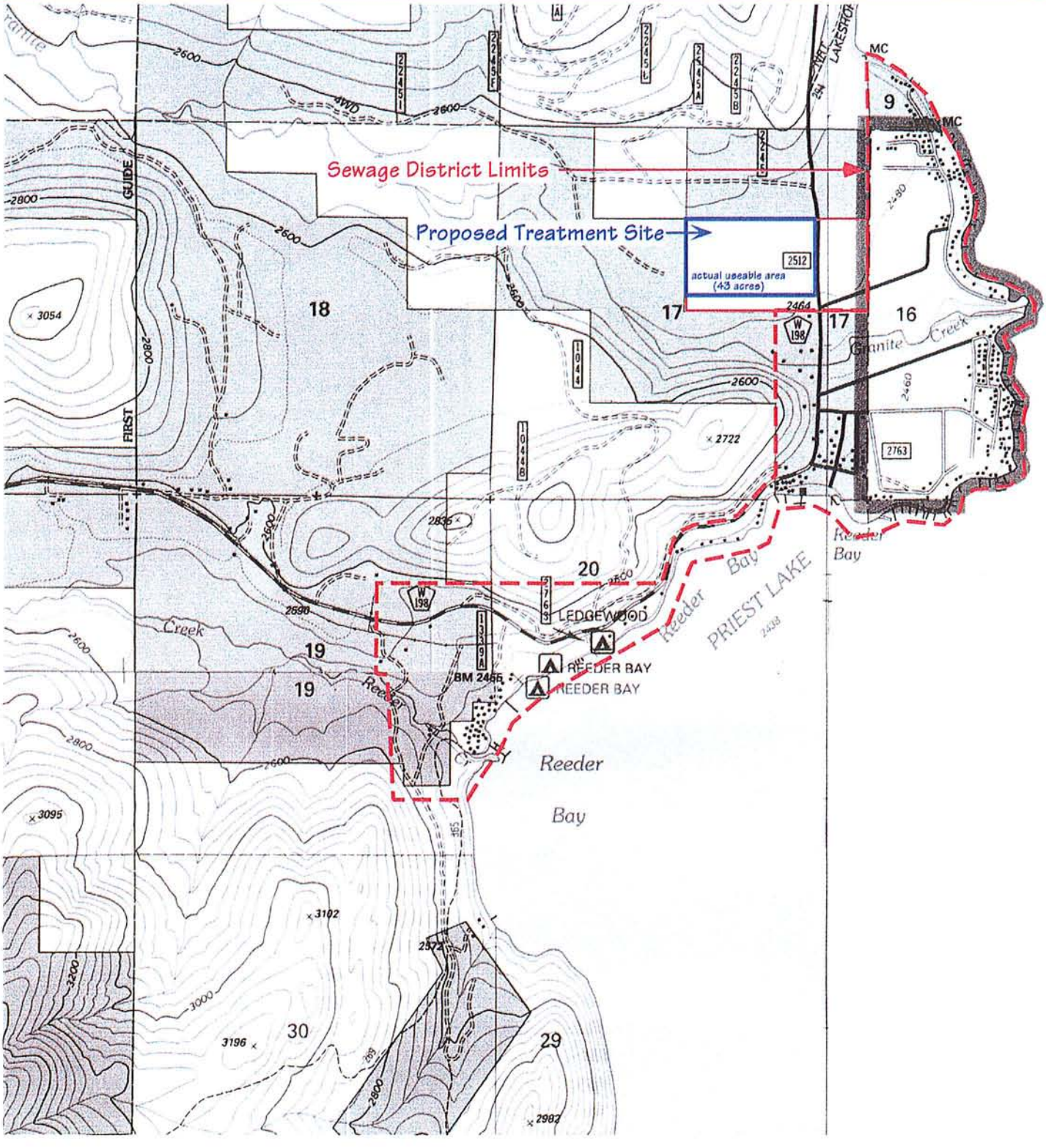



*no scale*

source: Rand McNally 1996, DeLorme 1992

**Figure 1.**
**Vicinity Map**
Granite Reeder Sewage Treatment Project

Tom Dressendorfer 5/1/02




scale: 1" = 2120' (approx.)
source: Rand McNally 1996, DeLorme 1992

**Figure 2.**
**Project Area Map**
Granite Reeder Sewage Treatment Project

Tom Dubendorfer 5/1/02

The *2000 Technical Guidance Manual for Individual and Subsurface Sewage Disposal Systems* by the DEQ provides standards for subsurface disposal systems. These include specific distances for separation between homesites, wells, public water supplies, property lines, etc., as well as specific construction techniques. The majority of the Granite Reeder community does not meet one of more of the above requirements due to small lot sizes, location and quantity of wells, height of ground water table, and the District's location relative to Priest Lake.

## 2.2 PROJECT OVERVIEW

In order to improve the existing conditions of the wastewater and sewage systems in the District, several alternatives are being proposed. The basic purpose is to construct collection facilities to transfer sewage to a community wastewater treatment facility.

## 2.3 PROJECT DESIGN

Based on the Alternatives Analysis discussed in the Facilities Planning Document (Welch Comer 2002), the recommendation for the District's new sewer system includes individual on-site disposal units consisting of positive displacement grinder pump and enclosure systems. These grinder pumps grind the sewage into a fine slurry enabling it be pumped through a pipe. The sewage would be pumped into a pressurized community collection system consisting of 2 to 6 inch high-density polyethylene (HDPE) pipe. The pressurized collection lines would deliver flow into a community wastewater treatment site, consisting of lagoon and land application equipment located at an 80-acre site presently owned by the US Forest Service (Township 61 North, Range 4 West, the NW1/4 of the SW1/4 of Section 17) (Figure 2). The system will be designed in conformance with DEQ requirements.

## 2.4 CONSTRUCTION METHODS

Construction of the wastewater system involves 2 primary systems: a collection system and a treatment system. These are discussed below. The equipment used in the project will be similar to those used in typical trenching operations: dump trucks, backhoes, generators, pumps, brush cutting equipment, pickup trucks, etc. The proposed timing is phased: Phase I—construction of lagoon and sprayfield irrigation system (summer 2003), and Phase II—construction of collection systems (summer 2004).

### 2.4.1 Collection System

A grinder pump unit would be located within the public road right of way (ROW). Each individual property owner would be required to remove (or abandon) the existing treatment unit and to connect their home to the District grinder unit. The grinder pump unit is smaller than a conventional septic tank. The pressurized sewer line would be 2" to 6" diameter HDPE pipe buried a minimum of 4.5 feet deep to prevent freezing. The pipes would be heated and fused at the joints to eliminate potential of leakage. The installation will involve excavation of a (minimum of 2.5 feet wide) trench. The pipe will be bedded and backfilled as is typical in utility construction. A construction easement of at least 20 feet will be provided

for the collection system. There will be approximately 12,100 lineal feet of 2-inch HDPE; 12,800 feet of 3" HDPE; 7,500 feet of 4" HDPE; and 8,700 feet of 6" HDPE used in the collection system. This does not include local hookup to each residence/facility. An approximately 1,000-foot access easement west of Reeder Bay Road will be required to connect the collections system to the lagoon site (Figure 3).

### 2.4.2 Treatment Facility

The proposal involves a sealed bottom, approximately 2 acre, open lagoon as the primary treatment facility. Wastewater is transferred from the collection system to a fenced lagoon where it receives primary treatment and disinfection (using chlorine). In summer (May to October), the resulting effluent is used to irrigate a crop (in this case, spray irrigation on an approximately 22-acre tree plantation), and in winter, the lagoon is used for storage. Active winter storage is calculated to be 6.4 million gallons. To ensure that water quality is protected, irrigation rates are designed to be less than what can be used by the crop plus evaporation. This minimizes the possibility of wastewater seeping down into the water table or running overland into surface waters. DEQ requires an annual land application report to be submitted, summarizing wastewater characteristics, total land application, lagoon levels, etc. All construction and operation techniques, and buffer zones required from land application sites will conform to DEQ requirements.

## 2.5 ACTION AREA

The "action area" is defined herein as the specific project construction areas including existing roadways for installation of collection systems, the wastewater treatment lagoon site, the spray irrigation area and required buffers. The action area also includes potential equipment and construction-related staging areas. According to Figures 2 and 3, the areal extent of the District is about 620 acres. USFS lands within the District total approximately 134 acres (the 80-acre treatment site, and about 54 acres in the south end of the project (Ledgewood, Reeder Bay Campground, and Elkins Resort areas).

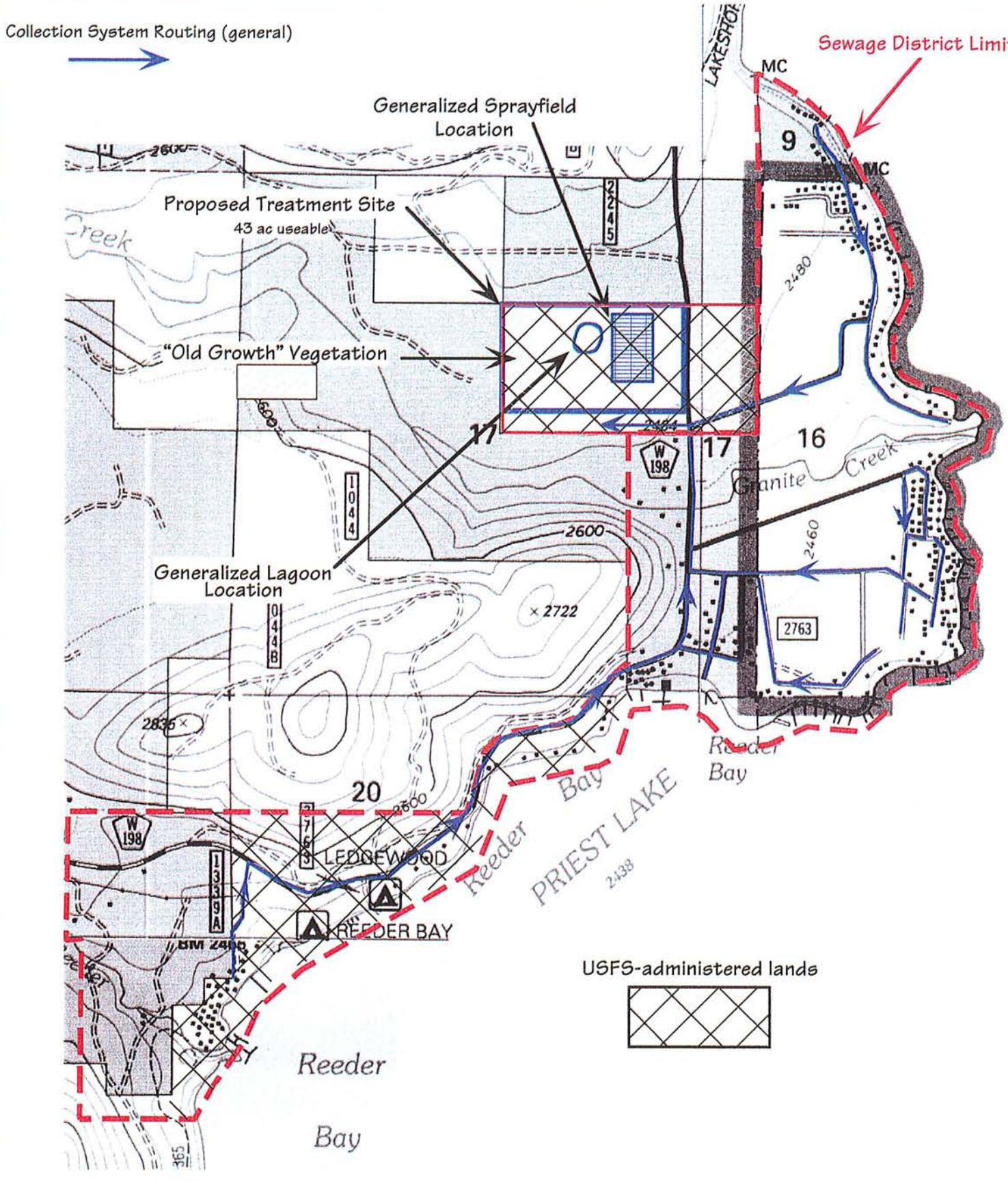



**Figure 3.**
**Proposed Action Map**
Granite Reeder Sewage Treatment Project

## 3.1 BACKGROUND RESEARCH

Initial review of background information commenced with identification of which species are federally listed as threatened or endangered. Updated lists of rare plant and animal species locations were obtained from the Conservation Data Center (CDC) Nongame and Endangered Wildlife Program from the Idaho Department of Fish and Game and US Forest Service (USFS) (CDC 2002). Information on specific, known historical (recent and documented) locations of rare plants collected or observed within adjacent townships was obtained and analyzed for distance from site, habitat similarities, and elevation. A formal request to the US Fish and Wildlife Service for a list of federally listed species was made (Appendix A). Personal communication with USFS botanists, wildlife and fisheries biologists, and fisheries biologists from DEQ and the Kalispell Tribe, were made to ascertain basic requirements, location information, recent studies and surveys, and obtain updated species lists (Asleson, Davis, Dekome, Hammet, Layser, Mahroney, Rothrock, all pers. comm. 2001 and 2002; Appendix B). Regional texts and plant manuals were also consulted (Cronquist et al 1977, Davis 1952, Hickman ed. 1993, Hitchcock et. al. 1969, McCune and Geiser 1997, Mousseaux 2000, Munz and Keck 1959, Prescott 1980, Steward et al, 1963, Vitt et al, 1988).

Aerial photographs and 7.5 minute topographic quadrangles of the project areas were studied, then reconnaissance fieldwork was initiated to assess potential habitat.

Additional habitat information, associated species, and more site-specific details concerning the plants, animals, and the potential for their occurrence were obtained from regional and local Environmental Impact Statements and studies (USDA 1999, PBBTAT 1998, IDHW and DEQ 1997). Experience and information from previous rare plant surveys, wetland delineations, and Biological Assessments and Evaluations occurring in the Idaho Panhandle over the last nine years were also used (Duebendorfer 1993, 1994, 2000, 2001a, 2001b, 2002a, 2002b). Also consulted were sources available via the Internet.

## 3.2 SURVEY METHODS

I completed a field survey for wetlands, wildlife habitat, rare plant species, and vegetation descriptions on September 8 and October 24, 2001, and April 18, 19, 2002. The method of survey involved traversing (on foot) the roughly 80-acre proposed treatment facility site, and by car and foot, the collection system roadways and connection areas.

Observations of vegetation associations, species (age and vigor), habitat characteristics (snags, downed logs, and special microsites), stream areas (Granite and Reeder Creeks), and potential wetlands were made and noted. A comparison with existing on-site vegetation with that of known associated plant species and wildlife habitat was made.

For the listed animal and fish species, no specific surveys were made—but the entire project was surveyed for general habitat characteristics, including tracks, dens, snags, scat, and fur/hair.

## 4.1 HABITAT WITHIN THE PROJECT AREA

Topographically, the site is located in the Priest River watershed, a relatively mountainous area in the coniferous forest biome. Vegetation varies greatly in this area, being especially susceptible to changes in aspect, slope, topography and soils. The slightly sloping/benchy terrain of the proposed wastewater treatment site is generally underlain by moderately shallow, moderately permeable gravelly sandy loams. Elevations range from 2,550 feet at the proposed treatment site to the lake level at 2,438 feet.

### 4.1.1 Vegetation

In general, the dominant vegetation in the area is in the *Tsuga heterophylla* (western hemlock) series (Cooper et al. 1987). Appendix C lists all vascular and non-vascular plant species identified during the September and October 2001, and April 2002 field surveys.

At the proposed treatment site (Figure 3), roughly the west half consists of semi-logged coniferous forest (Moist Forest Guild) (see also Appendix D). Coniferous species include: Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), western white pine (*Pinus monticola*), and larch (*Larix occidentalis*). Many of these trees are saplings or young trees to about 30 feet tall. In the more open areas, the shrub layer is reasonably well-developed, being dominated by redroot (*Ceanothus sanguineus*), ocean spray (*Holodiscus discolor*), rose (*Rosa gymnocarpa*), thimbleberry (*Rubus parviflorus*), grouseberry (*Vaccinium scoparium*), and snowberry (*Symphoricarpos albus*), as well as low growing woody species: box (*Pachystima myrsinites*), Oregon grape (*Berberis repens*), twinflower (*Linnaea borealis*), and kinnikinnick (*Arctostaphylos uva-ursi*). Herbaceous species include both native species: strawberry (*Fragaria vesca* and *F. virginiana*), dry sedge (*Carex* spp.), pinegrass (*Calamagrostis rubescens*), pipsissewa (*Chimaphila umbellata*), wintergreen (*Gaultheria ovatifolia*), brackenfern (*Pteridium aquilinum*), needlegrass (*Stipa* sp.), goldenrod (*Solidago* sp.), violet (*Viola* sp.), and pyrola (*Pyrola asarifolia*); as well as non-native species typical of logged and otherwise disturbed areas: mullein (*Verbascum thapsus*), bentgrass (*Agrostis stolonifera*), thistles (*Cirsium arvense* and *C. vulgare*), knapweed (*Centaurea maculosa*), and toadflax (*Linaria dalmatica*).

The east half consists of minimally disturbed, mature evergreen coniferous forest. Identified also as belonging to the Moist Forest Guild, the dominant tree species is western hemlock, with some individuals attaining diameters-at-breast-height (DsBH) of greater than 24 inches and heights more than 80 feet (Appendix D, Photograph 2). Mature western white pines are also common in this area. Due to canopy cover, sparse undergrowth, and species regeneration, the forest would be classified as "old growth". Other species include grand fir, Douglas fir, and cedar over a very sparse groundcover layer. Woody shrubs are essentially lacking with sparse representation by Oregon grape, box, and twinflower. Herbs are sparse, but include pipsissewa, goldthread (*Coptis occidentalis*), bunchberry (*Cornus canadensis*), twinflower, Oregon grape, and violet. Moss (including *Plagiothecium* spp., *Polytrichum*

spp., *Pleurozium schreberi*)and lichen (*Peltigera* spp., *Alectoria* spp., *Cladonia* spp., *Lobaria* spp) cover is high (Appendix C).

In the collection system portion of the project, the sewer pipes would be placed in the existing road ROW. Very little vegetation would have to be removed for the installation of the pipes, though some ruderal and native vegetation along the roadsides may need to be removed. Typical vegetation in the residential and commercial areas is similar to the undisturbed forested areas, with the addition of typical roadside species.

### 4.1.2 Wildlife Habitat

The coniferous forest areas (both disturbed and relatively undisturbed) would host an array of vertebrate wildlife species such as deer, bear, moose, elk, and bobcat. In addition, many passerine birds and small mammals would occupy most of the available habitat. Various raptors may frequent the forested and more open areas. Numerous snags are present in the old growth forests, providing habitat and refuge for woodpeckers. Evidence of activity by pileated woodpeckers was observed. However, the proximity of Reeder Bay Road (as it bisects the proposed treatment site) and human activities in the residential and commercial areas would probably considerably reduce the number of large game and non-game mammals that frequent the area.

### 4.1.3 Wetlands

There are no wetland areas or creeks at the proposed treatment site. Granite Creek is outside the USFS-administered lands and flows from west to east across Reeder Bay Road (Figures 2 and 3). Several wetland areas were identified in the Elkins Resort area (extreme southern portion of the collection system within the USFS-lands). These included (1) a small ephemeral creek crossing Reeder Tracts Road, which flows into a swampy, initially well-braided forested area dominated by cedar; (2) a deciduous forested to scrub-shrub thicket with shallow ponds just near the entrance to Elkins Resort (Appendix D); and the (3) riparian system associated with Reeder Creek. These wetlands cross resort and/or residence access roads via culverts. They are located outside the actual roadway area.

### 4.1.4 Water Resources and Fisheries

The project area lies within the Priest Lake Basin. The extent of the entire basin exceeds 590 square miles. It can be arbitrarily divided into three sections: Upper Priest Lake, Lower Priest Lake, and the Priest River drainage. Lower Priest Lake is the third largest natural lake in Idaho and second in volume. The outlet to Lower Priest Lake forms the Priest River. Priest River flows in the Pend Oreille River at the city of Priest River.

The project area lies within the Lower Priest Lake subbasin which extends from Beaver Creek to the south end at Chase Creek. Granite and Reeder Creeks are both tributaries to Lower Priest Lake which are located within the project limits. The Granite Creek subwatershed is the largest in the basin. Its overall gradient is low with many flat areas and associated wetlands. Reeder Creek is a smaller volume creek and may go subterranean late in the season.

Water quality of the lake is generally good—it is an oligotrophic (low-nutrient) system, with excellent water clarity and dissolved oxygen levels. Nutrients entering the lake from Granite Creek are generally moderate (a relative ranking based on all tributaries entering Priest Lake). Reeder Creek is considered to input the highest relative amounts for phosphorous and nitrogen—this being attributed to normal spring runoff. The large wetland and agricultural areas in the lower reaches of Reeder Creek produce these levels by natural vegetative decay and the ambient soil characteristics (IDHW and DEQ 1997).

Fish species known to inhabit the lake include four native salmonids (westslope cutthroat trout, bull trout, mountain whitefish, and pygmy whitefish. Lake trout (mackinaw) were introduced into Lower Priest Lake in the 1920's. Kokanee were introduced in the 1940's—however, they are now essentially absent from the lake (IDHW and DEQ 1997). Granite Creek has westslope cutthroat trout, bull trout, sculpins, and brook trout (an introduced species); whereas Reeder Creek has cutthroat and brook trout, but lacks bull trout (IDHW and DEQ 1997). Reeder Creek is considered low priority for bull trout recovery plans (PBTATT 1998).

## 5.0 LISTED SPECIES

A Biological Assessment (BA) for this project has been completed (Appended to the Environmental Assessment). The Fish and Wildlife Service supplied a species list dated March 20, 2002 which contained the following species: gray wolf and Selkirk Mountains woodland caribou (both endangered), bald eagle, Canada lynx, bull trout, grizzly bear, and Ute ladies' tresses (all threatened), and western yellow-billed cuckoo and slender moonwort (both candidate species). Pertinent to the federally-listed species, information in this BE mirrors that completed for the BA.

The following descriptions and location information is given in two sections: the first (Section 5.1) specifically addresses the federally-listed species: gray wolf and Selkirk Mountains woodland caribou, bald eagle, Canada lynx, grizzly bear, bull trout, and Ute ladies' tresses; the second (Sections 5.2 through 5.4) address those species listed as "sensitive" by the USFS. Table 1 itemizes species listed by the FWS (Appendix A). Candidate species are not addressed in this document (see BA).

**Table 1**
**Federally Listed Animal Species Potentially Occurring within the Project Area**

| Species | Status | Species/Habitat Present within the Project Area? |
|---|---|---|
| **Animals** | | |
| Gray wolf | federally endangered | yes |
| Woodland caribou | federally endangered | yes |
| Bald eagle | federally threatened | yes |
| Canada lynx | federally threatened | yes |
| Grizzly bear | federally threatened | yes |
| Bull trout | federally threatened | yes |
| Ute ladies' tresses | federally threatened | no |

## 5.1 FEDERALLY LISTED SPECIES

### 5.1.1 Gray Wolf (*Canis lupus*): Endangered

Habitat Requirements

Wolves need large expanses of territory for feeding. Cause for decline in numbers of wolf include habitat loss, hunting, trapping, and poisoning. Loss of prey base due to land development and influx of human activities are significant in reasons for its decline. Thus, the loss of wolves can be directly related to human intrusion into their territory and loss of habitat due to roads and human presence.

Key components of gray wolf habitat include: a year-round prey base of ungulates and alternate prey, secluded denning sites, and space without exposure to humans (USFWS 1987).

Distribution within the Project Area

Gray wolves once ranged over the entire North American continent, except for southern California and southern United States. They are currently restricted primarily to regions of northern Canada and parts of Mexico. Figure 4 shows the most recent sightings of wolf in the project vicinity. Four sightings are documented near Nordman and one in 1994 was near a house between the Reeder Bay and Ledgewood campgrounds. The project area supports moose, elk, white-tailed deer and mule deer as potential prey species. Ungulates are common and available, providing an ample prey base. Populations are not currently limiting wolf recovery in the Selkirk Mountains.

### 5.1.2 Selkirk Mountain woodland caribou (*Rangifer tarandus caribou*): Endangered

The recovery area for the local population includes the Selkirk Mountains of northern Idaho, northeastern Washington and southern British Columbia, Canada. As part of the recovery plan, caribou were introduced into the ecosystem from source populations in British Columbia between 1987 and the present. By 1990, the local population increased to approximately 55 to 70 animals.

Habitat Requirements

Mountain caribou are mostly found on moderate slopes above 4,300' elevation, and use streams, bogs, and other areas composed of mature or old growth evergreen trees (Rodrick and Milner, 1991). Apparently caribou avoid immature forests (less than100 years old). Caving occurs on high elevation rocky ridges with sparse to moderate canopy cover. Caribou feed on lichens, herbaceous vegetation (including mushrooms, leaves, grasses and sedges). *Alectoria* and *Byroria* (both lichens that attach to trees) are the dominant food source during winter months. Old growth and spruce-fir habitats provide substrate for these lichens.

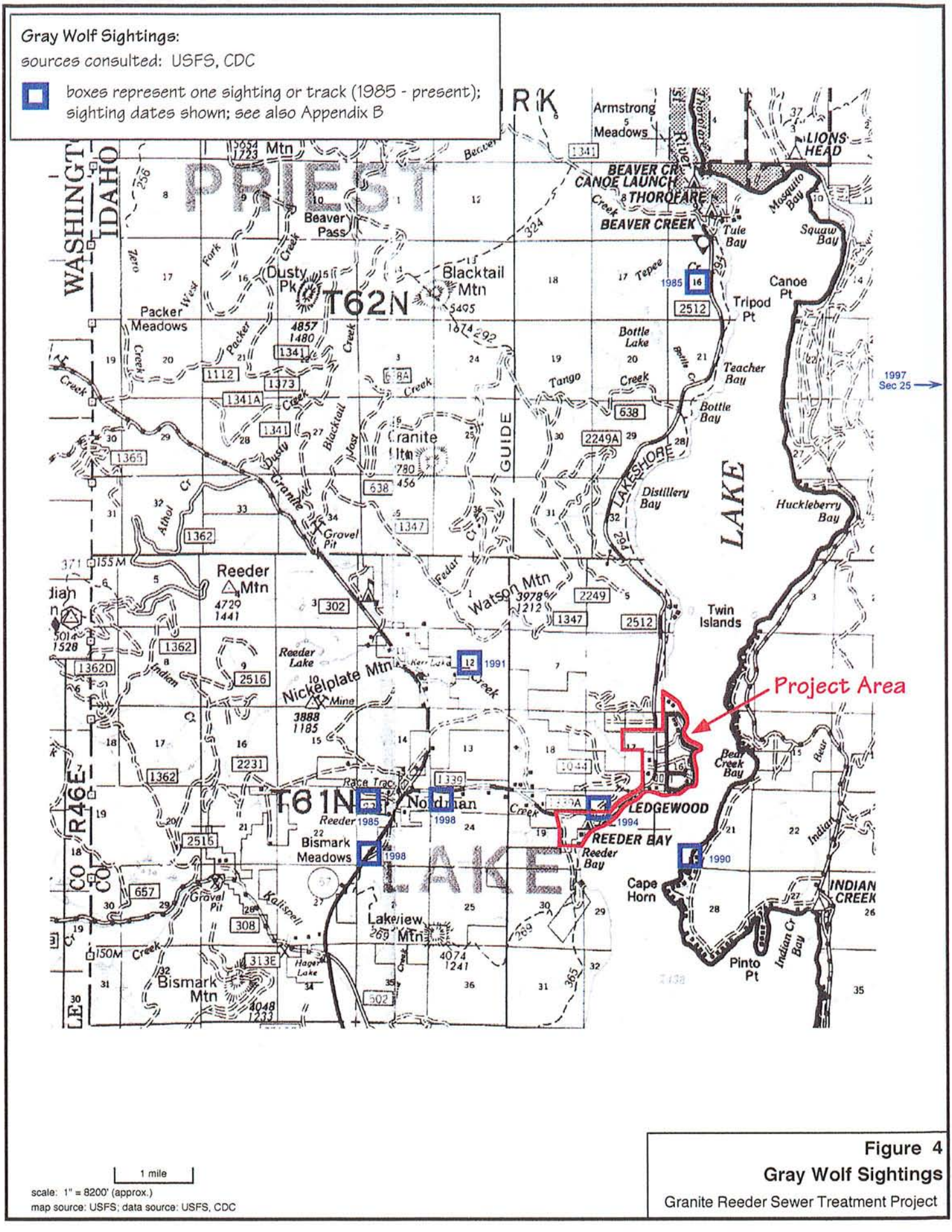



**Figure 4**
**Gray Wolf Sightings**
Granite Reeder Sewer Treatment Project

They are highly adapted to upper elevation boreal forests and typically do not occur in drier low elevation habitats except as rare transients. Seasonal movements are complex in the local population and normally occur as altitudinal patterns moving to traditional sites for different seasons (USDA 1999). The population is threatened by habitat fragmentation and loss, and excessive mortality from predators and illegal human take.

Caribou are found mostly in habitats with the following characteristics: (1) abundance of lichens, (2) stands with greater than 50% canopy cover, (3) and trees with diameters-at-breast-height (DsBH) exceeding 8 inches (Servheen and Lyon 1989 in Rodrick and Milner 1991). Generally in winter, caribou habitat is higher elevation (dense, closed stand of mature evergeens and subalpine areas); in spring they may descend to lower elevations, (south and west aspects and valley bottoms). During summer they once again ascend to higher elevations in mature spruce-subalpine fir stands, and by fall they may again descend to lower elevations to dense-canopied stands, valley bottoms, and riparian areas (Rodrick and Milner 1991). Basic limiting factors include: habitat loss, natural and human predation, habitat fragmentation and the availability of forage.

Distribution within the Project Area

The proposed project activities are outside the area designated for recovery. The woodland caribou management unit and recent sightings are shown on Figure 5. A 1997 (hair) sighting was located about 2 airmiles north of the proposed treatment site. Other recent sightings include the Elkins Resort area (Layser pers. comm. 2002). The Management Unit is largely above elevation 4,500 feet. However, individual sightings of the population may found below that elevation in the Selkirk Mountains in Engelmann spruce/subalpine fir and western red cedar/western hemlock forest types.

### 5.1.3 Bald Eagle (*Haliaeetus leucocephalus*): Threatened

The goals of the Recovery Area have been exceeded. No critical habitat has been designated for this species.

Habitat Requirements

Wintering activities occur from about October 31 to March 31 (USFWS 1986). Wintering bald eagles concentrate in areas where food is abundant and disturbance is minimal (Rodrick and Milner 1991). Bald eagle food habits vary, but they typically feed on fish, waterfowl, and seabirds, either captured or consumed as carrion. Bald eagles winter near their food source, typically near large bodies of water including large lakes, reservoirs, rivers, and coastal areas. Eagles typically perch near their food source during the day and prefer the tallest trees which afford the best views. Tree species is less important than tree structure. Deciduous and dead coniferous trees near the feeding area are preferred for diurnal bald eagle perching (Stalmaster and Newman 1978, 1979). Evening roosts are generally established near the feeding area, but may occur inland as well (Steenhof 1978 in Peterson 1986). Secluded, mature, and old growth forests provide preferred roosting habitat (Rodrick and Milner 1991).

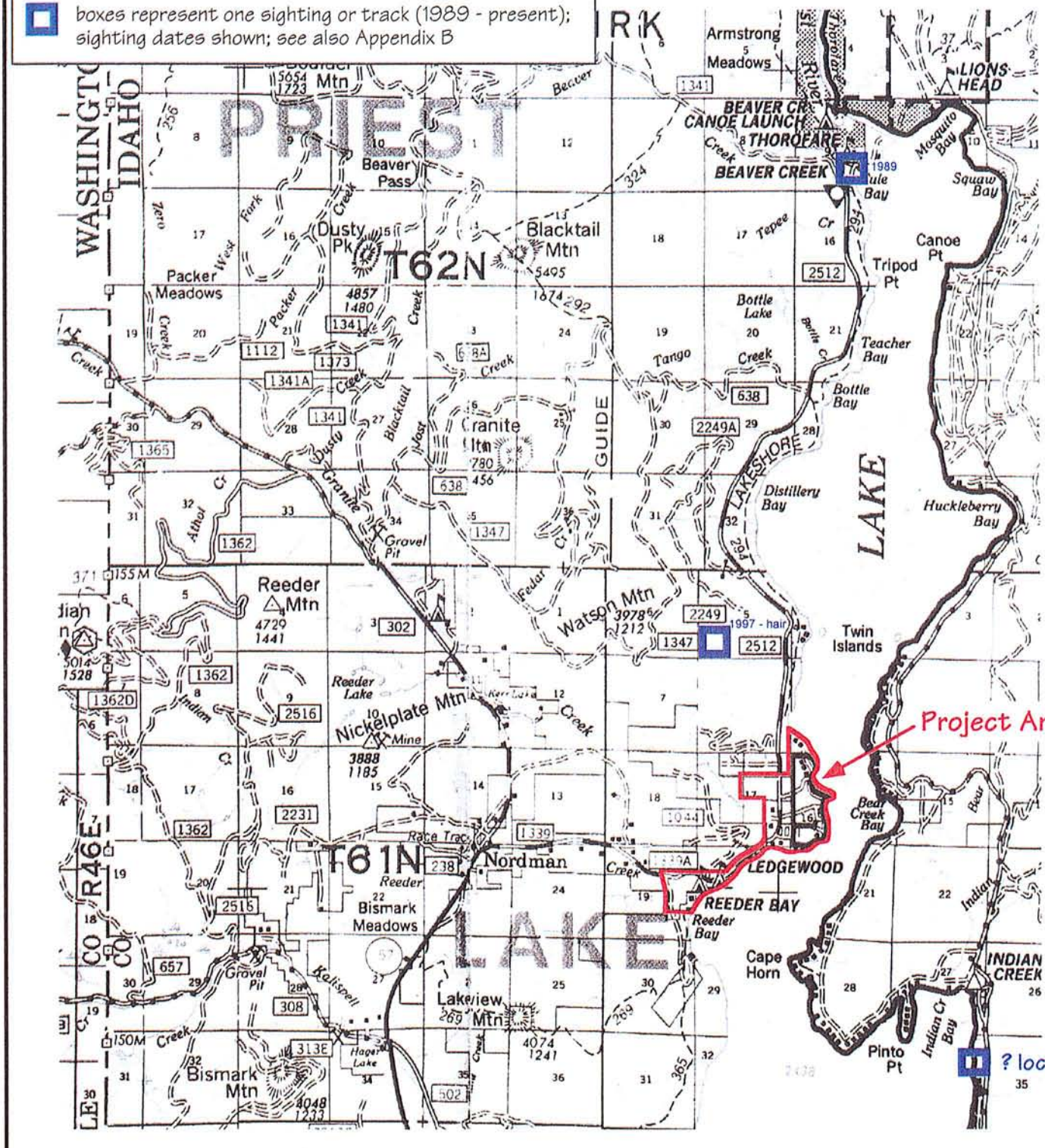



**Figure 5**
**Woodland Caribou Sightings**
Granite Reeder Sewer Treatment Project

Bald eagle nest parameters in the Pacific Northwest include proximity to water with an adequate food source, large trees with sturdy branching at sufficient height for nesting, and stand heterogeneity both vertically and horizontally (Grubb 1976). Typically, cottonwoods that are 9 inches DBH and 70 to 100 years old (often the largest tree in the stand) are chosen for nest sites (Herrick 1933, Bent 1937, Snow 1973, Lehman 1979). Cottonwoods are also frequently used as roost trees. The height of the tree, however, is the most important factor and the tallest trees in an area are chosen (Jonen 1973, Snow 1973, Lish and Lewis 1975, Steenhof 1978, Stalmaster and Newman 1979, Steenhof et al 1980). Such forest components are typical of mature and old growth forests. Nesting activities may last from January 1 to August 15 (USFWS 1986).

Distribution within the Project Area

The proposed project lies within Zone 7 of the Pacific Bald Eagle Recovery Area. Wintering bald eagles are typically observed in the project area from late October to mid-March, but can be observed essentially throughout the year.

No nest sites have been reported by the USFS or the Conservation Data Center (CDC) (Appendix B). Tim Layser (USFS) supplied me with known locations and sightings of bald eagles from 1983 to the present (Layser pers. comm. 2001). Figure 6 shows that bald eagles are commonly sighted in the area near the project limits. There are a few nests in the general vicinity (Kalispell Island [about three miles south of the project area], Outlet Bay [more than 10 miles south of the project area], and Bear Creek [on the east side of Priest Lake at Bear Creek, less than one mile from the project area]. All three nest areas fledged at least one young in 2000 and 2001 (Layser, pers. comm. 2001). Eagles have also been sighted up Granite and Reeder Creek. Annual eagle surveys documented the presence of eagles near the mouth of Granite Creek, and a few sightings in the Ledgewood and Reeder Bay campgrounds.

The location of the proposed treatment site precludes adequate foraging habitat (no open water within sight distance, and the trees in the old growth portions (Section 4.1.1) do not afford appropriate perching trees because of the density of the forest. While the lakeshore area could support nests—no nests were identified nor observed during the field visits.

### 5.1.4 **Canada Lynx** (*Lynx canadensis*): Threatened

Habitat Requirements

Lynx are mostly solitary, nocturnal, and secretive. They take refuge under ledges, trees, deadfalls, and in thick cover. Their principal food is the snowshoe hare—and are thus most often associated with high snowshoe hare populations. Home ranges vary from 8 to several hundred $km^2$ (CDOT 1999). Lynx homerange and movement is dependent on food availability and lynx may expand their territory considerably in search of food.

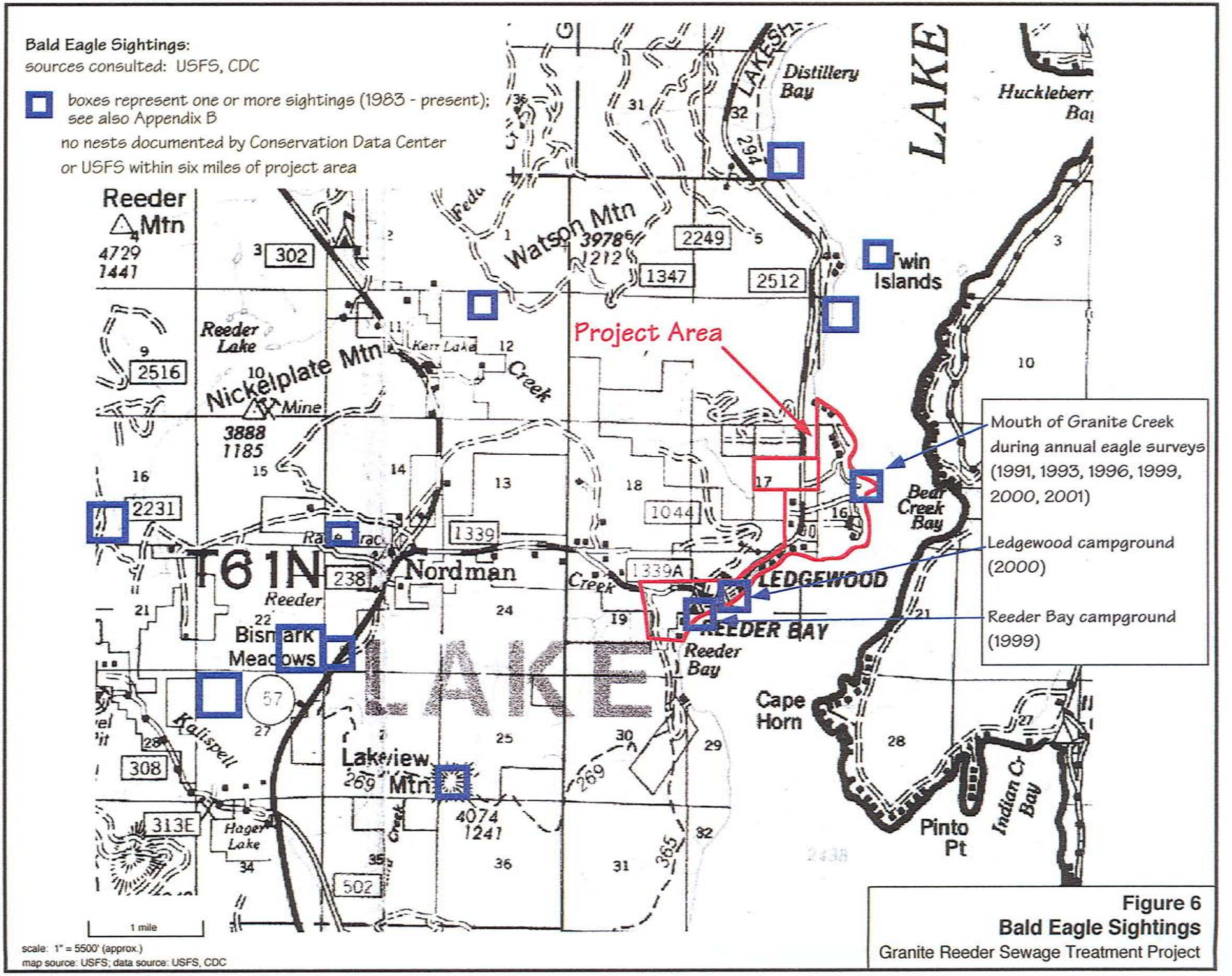



**Figure 6**
**Bald Eagle Sightings**
Granite Reeder Sewage Treatment Project

Lynx are associated with northern boreal forests (Alaska and Canada) dominated by spruce, subalpine fir and lodgepole forests (Koehler and Brittel 1990). Their habitat requires a mix of successional forest stages. They also occur in lower numbers in the boreal forests of New England, the upper Midwest states, and in montane forests of the Washington Cascades and Northern Rocky Mountain province of Idaho and Montana. High elevation forests (generally above 7,000 ft) in Utah, Wyoming, and Colorado represent the southern extent of known lynx range (Fed. Reg. 1998). Kootenai National Forest has prepared a Lynx Conservation Strategy (USFS 1997), which defines suitable ranges as occurring above 4,000 feet elevation. Lynx have a strong preference for densely forested cover types. In our area, they are more associated with higher elevation (greater than 3,500 ft), mesic habitats. Since the snowshoe hare occurs mostly frequently in more open areas, the lynx faces threats by entering these more open areas, and ultimately return to forested cover as soon as the food source diminishes (ODOT 1999). Thus, continuous cover (openings less than 300 feet) is generally required for travel corridors (USFS 1997).

Lynx typically do not cross open areas such as roads or railroads. Thus their response to open exposed areas is negative. In addition, the presence of roads makes available, dispersal corridors for lynx competitors (cougar, bobcat, and coyote). Habitat fragmentation is thus considered one of the most important causes of lynx population reduction (ODOT 1999).

Distribution within the Project Area

Since the listing, USFS has, together with the draft "Canada Lynx Conservation Assessment and Strategy" document, determined several Lynx Analysis Units (LAU's). The LAU's in the vicinity of the the Granite Reeder Wastewater Treatment project are located as shown on Figure 7. The Sema and Kalispell LAU's are well west of the proposed project; however the Blacktail LAU approaches the proposed treatment site. All of the recent sightings have been in the Kalispell LAU (CDC, USFS, Figure 7). These sightings are 6 miles or more from the proposed treatment site, and only one record indicates the lynx has been observed closer the lake in the vicinity of the district limits (south end of Distillery Bay, Figure 3). Most of the sightings have been listed as "high" reliability (Appendix B), and most of the occurrences have involved a sighting as the lynx crossed a Forest Service road.

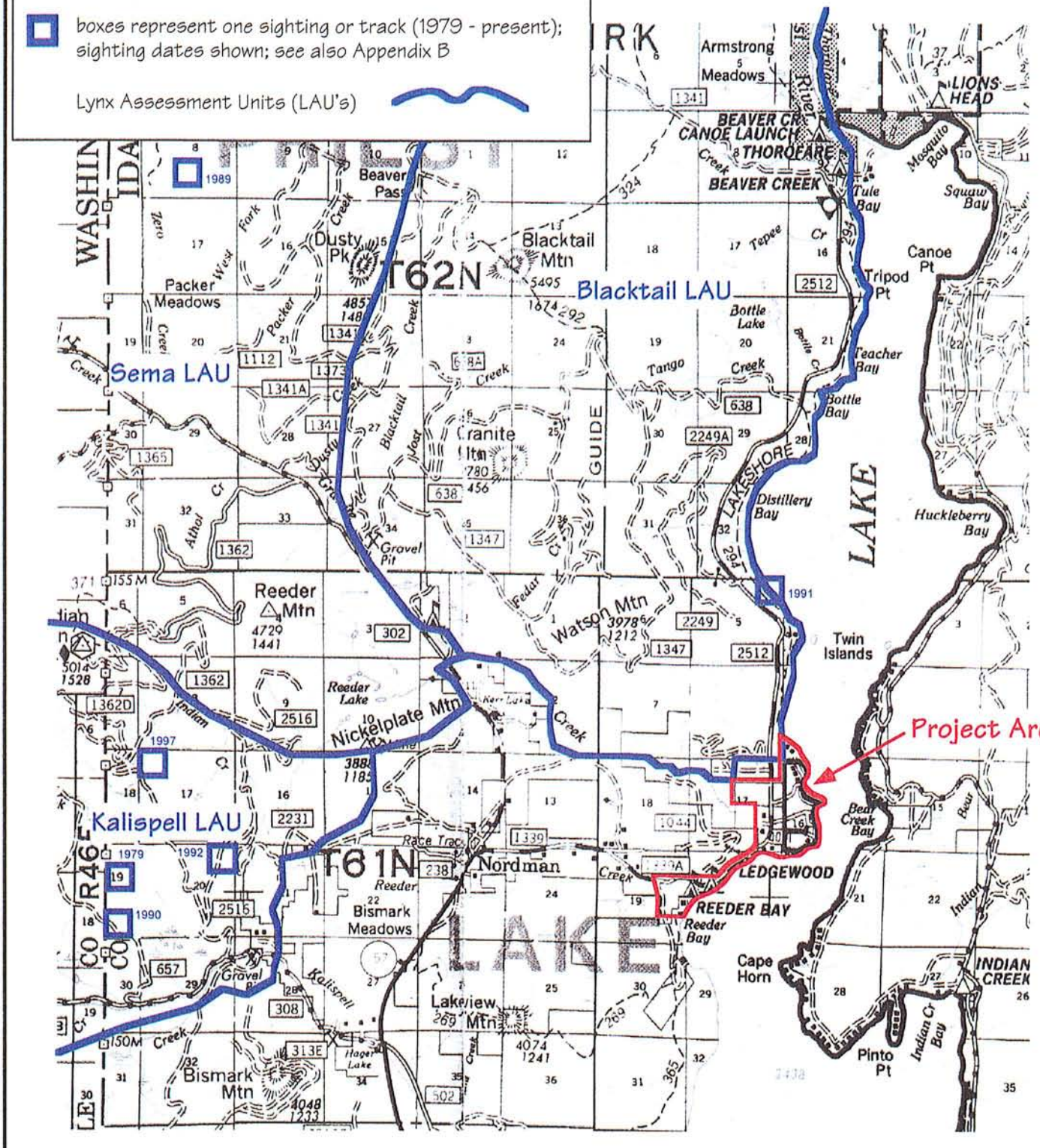



**Figure 7**
**Canada Lynx Sightings/Assessment Units**
Granite Reeder Sewer Treatment Project

### 5.1.5 **Grizzly bear** (*Ursus arctos horribilis*): Threatened

As with the gray wolf, cause for decline in numbers of the grizzly include habitat loss and hunting. Because of the grizzly's need for remote, relatively secluded habitat, most of its decline in numbers in the northern states can be attributed to influx of human activities and the concomitant reduction in food base due to land development.

Life History and Habitat Requirements

Grizzlies prefer ridgetops, alpine meadows, and forest-meadow ecotones in relatively remote or secluded forested habitats. They are not often reported in lowlands or in developed areas. Disturbance from roads and human activity (construction or machinery) is often an effective deterrent to grizzly presence. Important food sources include succulent undergrowth early in the season (after emergence from hibernation) and berries (in our area, particularly huckleberries) in late summer and fall. Grizzly bears are typically excellent diggers, eating a wide variety of roots, corms, bulbs, tubers, and small mammals. Grizzly tracks and black bear tracks are often nearly impossible to differentiate.

They hibernate at higher elevations (greater than 5,000 ft) in the mountains. A grizzly home range may be up to 50 miles, but is generally 25 miles or less.

Distribution within the Project Area

The Granite Reeder Wastewater Treatment project lies within the Selkirk Ecosystem Recovery Zone (USFWS 1993b). The population estimate for the entire Selkirk ecosystem is unknown, but between the years 1985-1990, 26-36 bears were known to occur within a study area that composed approximately one-third of the ecosystem.

The northern portion of the proposed project just grazes the Lakeshore Bear Management Units (BMU) (Figure 8). The Lakeshore Grizzly BMU is about 18,000 acres and is the smallest of the BMUs in the Selkirk Ecosystem. Its eastern boundary with Priest Lake is highly developed with summer homes, resorts, campgrounds, etc. which make grizzly bear habitat maintenance and improvement unattainable in this area. Currently, security is maintained at about 30 percent for the spring, summer, and fall seasons. Less than 20 percent of the BMU is classified as "core" habitat. For the Lakeshore BMU where it is not feasible to achieve similar security and core objectives because of landownership patterns, the criteria for managing this BMU would be to achieve a no net lost of existing security and core habitat (USDA 1999). Grizzly bears have not been sighted recently within four miles of the project area—with the nearest ones including a 1995 sighting behind the Nordman store (about 3 airmiles west of the project area), and one in 1990 about 3 airmiles north (in the Distillery Bay area) (CDC 2002).

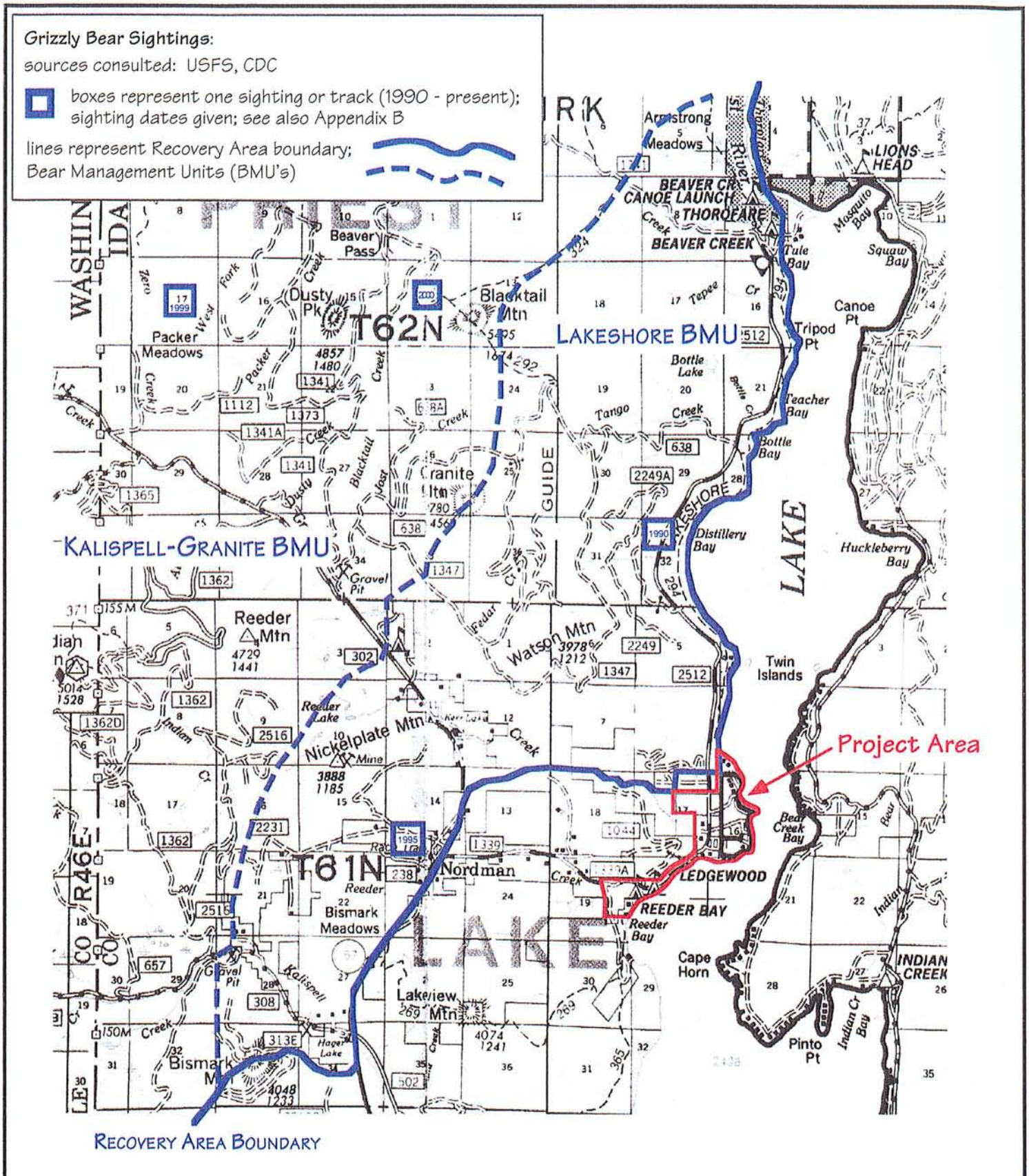



**Figure 8**
**Grizzly Bear Management Units/Sightings**
Granite Reeder Sewer Treatment Project

### 5.1.6 **Bull Trout** (*Salvelinus confluentus*): Threatened

Habitat Requirements

Bull trout is a freshwater species closely related to the anadromous Dolly Varden (*Salvelinus malma*). Bull trout are the only native char species in the Priest Lake drainage. Bull trout exhibit two life history strategies as adults: resident and migratory. Migratory bull trout live in large rivers or lakes and migrate to small stream headwaters to spawn. Resident populations spend their entire lives in smaller streams. Bull trout typically occupy the bottom habitat in contrast to other trout species. Depending on stream temperatures and other environmental conditions, bull trout generally spawn from the end of August through November. Migration is thought to be initiated by warming water temperatures since bull trout prefer cold water and move to colder upstream reaches. It is also suggested that lower water temperatures initiate spawning activity (Fraley and Shepard, 1989; Rodrick and Milner 1991). Bull trout require stream temperatures of 4-10 degrees C. with optimum conditions at 6-8 degrees C. for spawning.

Spawning occurs in the fine gravel substrate of the upper reaches of smaller clear streams. Eggs incubate over the winter and hatch in late winter or early spring. Hatching generally requires 3 to 4 months. Emergence typically occurs after a peak in stream discharge from early April through May (Pratt, 1992). Juveniles may rear in these streams for up to three years (Pratt, 1985; and Elle et al, 1995). This species is particularly sensitive to sedimentation because of this relatively long incubation and development phase. Bull trout generally take five to seven years to reach sexual maturity. The main diet of bull trout consists of terrestrial and aquatic insects, macrozooplankton, mysids (shrimp) and fish (University of Idaho, 1998).

Growth, survival, and long-term population viability is dependent on cover, channel stability, substrate composition, water temperature, and suitable migration corridors (Rieman and McIntyre 1993). The critical features for suitable migration corridor are: water temperatures, adequate flows, lack of physical obstructions (including log jams, mill ponds, irrigation diversions, and dams), and predation. The introduction of lake trout (*Salvelinus namaycush*), as well as harvest (intentional and unintentional) have been identified as significant reducers in bull trout numbers.

Distribution within the Project Area

The proposed project lies within the Priest Lake watershed. Since federal listing is relatively recent, specific recovery plans have not been completed. Only data from two surveys (1983 and 1984) were available the internet site Streamnet, a department in the Idaho Department of Fish and Game. Those data indicated the presence of adult bull trout (mean numbers = 45) at rivermile 1.5 up Granite Creek at the Granite Creek weir. It is known that bull trout inhabit (Davis pers. comm 2002; Dekome, pers. comm. 2001) and rear (Mahroney, pers. comm. 2002) in Priest Lake. They move up the local streams in the area, including Granite Creek. Bull trout within this drainage exhibit adfluvial and resident life histories. Adfluvial fish spawn in the streams and after about three years they move into Priest Lake. Bull trout are also known to spawn upstream in the North and South Forks of Granite Creek (nearer the Washington-Idaho border—thus the adfluvial population of bull trout in Priest Lake

definitely move up and rear in Granite Creek (Mahroney, pers. comm. 2002). Spawning may occur in the lower reaches of Granite Creek (Davis pers. comm. 2002), but this is not documented—thus the reach of Granite Creek through the project area is a migration corridor. There are no reported bull trout in Reeder Creek. (Davis, Rothrock, pers. comm. 2002).

### 5.1.7 Ute Ladies' Tresses (*Spiranthes diluvialis*): Threatened

Habitat Requirements

Its major life zone habitat is sagebrush-steppe to transition zone with montane forest (in lower timberline). Rangewide, all known populations generally occur below the coniferous forest vegetation zone. The populations are within steppe, shrub-steppe, or pinyon-juniper woodland areas. It occurs occasionally in meadows and irrigated pastures, isolated from rivers and streams (Moseley 1998b).

All *Spiranthes diluvialis* populations in Idaho occur on alluvial deposits (very coarse cobbles to fine-sands and sandy loams). Soils are Xeric Torrifluvents. Essentially all Idaho populations are submerged annually or nearly annually during high river flows in late spring/early summer. However it does not occur in the standing-water habitats of adjacent channels nor does it occur on the higher benches where the hydraulic lift is not enough to keep the near-surface soils moist enough. Although Idaho populations are submerged in spring and the coarse-textured soils drain as the season progresses, the soil surface appears to remain moist throughout much of the growing season. By mid-season, the water table may not be at the soil surface but soils are maintained moist by the capillary fringe of the soil water levels.

Specific habitat characteristics in Idaho populations include an alkaline wet meadow, and mesic habitats on edge of flood channels (active in spring and inundated spring at 23,000 cfs). Such habitats are not present in the Granite Reeder Wastewater Treatment Facility project area. The range of Ute ladies' tresses in Idaho coincides with the range of *Elaeagnus commutata* (silverberry). This species is not present in northern Idaho.

*Spiranthes diluvialis* flowers late August through late September; whereas a more common species (*S. romanzoffiana*), flowers in mid-summer (late June to early August).

Distribution

The historical range of this species was Colorado, Utah, and extreme eastern Nevada. New populations have since been discovered in other portions of Utah and Colorado (Ute Ladies Tresses Recovery Team 1995), as well as eastern Wyoming in 1993 (Fertig 1994), Montana in 1994 (Heidel 1997), Nebraska in 1996 (Hazlett 1996), Idaho (Snake River Basin) in 1996 (Moseley 1997a), and one in Washington (Okanogan Valley) in 1997 (Heidel 1998; USFWS 1998a). It is highly discontinuous within its range. In Idaho the known populations are all located in the Snake River floodplain in the far eastern part of the state, in Jefferson, Madison and Bonneville counties.

There are no known populations of Ute ladies' tresses within the Idaho Panhandle, nor are there wetlands in or near the project area which could potentially harbor this species.

## 5.2 USFS SENSITIVE SPECIES - ANIMALS

Table 2 lists the USFS Sensitive animals that occur within the Priest Lake Ranger District, and as such, may occur or be affected by the proposed project. The species list was obtained from USFS staff in the Priest Lake Ranger District (Layser, pers. comm. 2001., 2002). Appendix B has USFS-compiled location information on these species.

**Table 2**
**USFS Listed Sensitive Animal Species that Occur within the Priest Lake Ranger District**

| Species | Scientific Name | Species/Habitat Present within the Project Area? |
|---|---|---|
| Black-backed woodpecker | *Picoides arcticus* | none documented |
| Boreal toad | *Bufo boreas boreas* | none documented |
| Coeur d'Alene salamander | *Plethodon vandykei idahoensis* | no |
| Common loon | *Gavia immer* | none documented, but likely |
| Fisher | *Martes pennanti* | none documented, unlikely use |
| Flammulated owl | *Otus flammeolus* | none documented, unlikely use |
| Harlequin duck | *Histrionicus histrionicus* | yes; Granite Creek |
| Northern bog lemming | *Synaptomys borealis* | no |
| Northern goshawk | *Accipiter gentilis* | none documented, but likely |
| Northern leopard frog | *Rana pipiens* | no |
| Townsend's big-eared bat | *Plecotus townsendii* | none documented, unlikely |
| White-headed woodpecker | *Picoides (Dendrocopus) albolarvatus* | none documented, unlikely |
| Wolverine | *Gulo gulo* | none documented, unlikely |

### 5.2.1 Black-backed woodpecker (*Picoides arcticus*)

Black-backed woodpeckers occupy dense coniferous forests, especially in burned, swampy, cutover, or beetle-killed forests where snags are present in high concentrations. The birds excavate nest cavities in trees 8-12 inches diameter at breast height (DBH) in species such as spruce, lodgepole pine, aspen, ponderosa pine, Douglas-fir, and larch. Nest cavities are located 3-16 feet above the ground and are often located near water. The birds are found less frequently in mixed forests, and rarely in deciduous woodlands in winter. Limiting factors for survival include fire suppression and activities that substantially reduce the dead and decaying component in their habitat (USDA 1992). The treatment site area has been logged in the past and harbors few snags. However, most of the old growth section of the treatment site east of Reeder Bay road does contains snags. Local sightings include: the Nordman area, south of Lakeview Mtn., and Fedar Creek (a tributary to Granite Creek in the Watson Mtn.)—all within 3 miles of the project area (Appendix B).

### 5.2.2 Boreal toad (*Bufo boreas boreas*)

Boreal toads are widely distributed in Idaho and can be found in appropriate habitat throughout most of the state. Boreal toads require shallow water in ponds, lakes or slow-moving streams for breeding sites. They lay their eggs in the warmest water available. After the brief spring breeding season, adult toads leave aquatic habitats and travel to a variety of upland habitats. The toads avoid crossing clearcuts and roads, however boreal toads have been documented traveling up to 2.5 miles away. Hence, they are largely terrestrial but can generally be found within a fair proximity to water. Their habitats range from mountain meadows to brushy desert flats. Activity varies seasonally and geographically. At low elevations, individuals are mainly diurnal in late winter and spring, and nocturnal in summer. Depending on conditions, mountain populations are active day or night in summer,. Hibernation occurs in winter in cold climates. The most significant potential barrier to their movements is roads. Sightings in the vicinity of the project have included Distillery Bay, Ledgewood picnic area, and Watson Mtn area (Layser, pers. comm. 2001).

### 5.2.3 Coeur d'Alene salamander (*Plethodon vandykei idahoensis*)

Coeur d'Alene salamanders are restricted to cool, damp aquatic such as seeps, waterfall areas, and along stream edges between 1,800 to 3,500 feet elevations. Known populations have only been located at sites where the presence of fractured bedrock, combined with relatively high substrate moisture, high relative humidity, and moderate air temperatures create favorable habitat conditions. By late March they emerge from winter hibernation and become active around April and May. They retreat underground from June to mid-September and become active again with fall rains. Habitat specific to Coeur d'Alene salamanders was not found to be present within the USFS portion of the project area (USDA 1999).

### 5.2.4 Common loon (*Gavia immer*)

In Idaho, common loons prefer large lakes (median 35 surface acres) with large populations of fish. They prefer to nest on islands, but will nest along shorelines. Nests are always within five feet of water. In the region, summer use by loons is high and verified reproduction is occurring in Upper Priest Lake. Loons are suspected of reproducing the Lower Lake, but this is not confirmed (Layser, pers. comm. 2001).

### 5.2.5 Fisher (*Martes pennanti*)

Fishers have a primary association with extensive mature coniferous forests. Uneven-aged forests, ecotones, ridges, and riparian areas are also regularly occupied by fishers. They use hollow logs, holes in the ground, snow dens, witches brooms, raptor nests, or squirrel nests for resting dens. Natal dens almost exclusively occur in cavities in large snags, between 20 and 40 feet above the ground. Habitat that offers cover to fishers and their prey in the winter is critical. They will not travel far into large openings and clearcut areas are avoided, especially in winter. They typically utilize ridge lines, riparian areas, and lake shores for movement. Their normal home range area varies from 1,000 to 20,000 acres. In 1997, two animals were sighted in the Indian Creek area (near FS road 1362 and west of Reeder Mtn, more than 5 airmiles from the project area) (Layser, pers. comm. 2001). In 1996, tracks were sighted by in the Granite Creek snowmobile parking lot.

### 5.2.6 Flammulated owl (*Otus flammeolus*)

Mature and old growth ponderosa pine forest (typically 200+ years) with relatively open canopies and above 3,000 feet elevation is preferred habitat. Mixed mature conifer forests with ponderosa pine and Douglas fir and/or grand fir are also occupied by flammulated owls. They require a high level of habitat diversity. Nesting occurs in natural cavities or abandoned woodpecker cavities. Ponderosa pine is not a common occurrence within the project area. A vocalization was reported in 1994 in the Watson Mtn are about 3 airmiles northwest of the proposed treatment site.

### 5.2.7 Harlequin duck (*Histrionicus histrionicus*)

During the nesting season (April to September), harlequin ducks require fast flowing water with nearby loafing sites (preferably midstream), dense shrub along the banks, and an absence of human disturbance. Nesting typically occurs in remote mountain streams. Roads, trails, and other areas frequented by humans are avoided for nesting. Harlequin ducks that occur in Idaho winter along the Pacific coast and are not present in the project vicinity in the winter. The CDC reports numerous sightings of this species along Granite Creek from its mouth some distance upstream (Layser, pers. comm. 2001).

### 5.2.8 Northern bog lemming (*Synaptomys borealis*)

Bog lemmings occupy cold sphagnum bogs or hummocky meadows dominated by sedges, often with standing water. Associated plant species include bog birch (*Betula glandulosa*), pale sedge (*Carex livida*), English sundew (*Drosera anglica*), and bog buckbean (*Menyanthes trifoliata*). Northern bog lemmings occur in widely spaced bogs and wet meadows and movement patterns between these habitats is unknown. The CDC does not report any documented occurrences of northern bog lemmings within five miles of the project area (CDC 2002). Habitat specific to this species is not present within the project area.

### 5.2.9 Northern leopard frog (*Rana pipiens*)

Habitat of the northern leopard frog includes wet meadows, potholes, and riparian areas where there is an abundance of vegetation to provide cover. Breeding occurs soon after streams or ponds are free of ice and snow. In summer, northern leopard frogs may stray far from water. They hibernate in mud of pond bottoms or sluggish streams. Northern leopard frog has a broad distribution compared to other frogs (Leonard et al 2000).

It ranges throughout most of the southern Canadian provinces and in the US from the Northeast through the Great Lakes region, the midwest, and Great Plains, to the Pacific northwest. In Washington, they are known from Potholes Reservoir in Grant County along the Columbia and Walla Walla Rivers, in Benton County. Records of this species have been made along the Snake River, Idaho. Elevations range from 270 feet in western Washington to 1,363 feet in Okanogan County, Washington.

### 5.2.10 Northern goshawk (*Accipiter gentilis*)

Northern goshawks are large forest hawks and occur throughout the year in northern Idaho. Goshawks are indicators of mature and old growth forests. Northern goshawks avoid large open areas due to competition from other raptors. Nesting habitat, rather than foraging habitat, appears to limit the numbers of goshawks in the area. The minimal stand size for goshawk nest sites is about 30 acres. In the Lakeshore-Granite analysis area, there are two

known territories, however local sightings are numerous: along Reeder Bay road (1 mile north, and 2 miles south of the project area), as well as the Watson Mtn and Distillery Bay areas).

#### 5.2.11 Townsend's big-eared bat (*Plecotus townsendii*)

Townsend's big-eared bats require caves for breeding, roosting and hibernation sites. They may also occupy lava tubes, rock outcrops, and abandoned buildings. Temperature and humidity are critical elements affecting habitat suitability. They are extremely sensitive to disturbance especially at nursery sites.

#### 5.2.12 White-headed woodpecker (*Picoides albolarvatus*)

Primarily a coastal species, the white-headed woodpecker is locally common in stands of pine or firs. It is resident from south-central British Columbia, north-central Washington and northern Idaho, south through Oregon (east of Cascades) to southern California and west-central Nevada. It inhabits montane coniferous forests (primarily pine and fir) and is usually found at elevations between 3,600-7,400 feet during nesting season, but may descend to lower elevations during winter. In Idaho, species is restricted to mature or old ponderosa pine and mixed coniferous forests. Habitat specific to white-headed woodpecker is present within the proposed treatment area.

#### 5.2.13 Wolverine (*Gulo gulo*)

Wolverines are wide-ranging species that inhabit remote forested areas. Wolverines use lower elevations in the winter and higher elevations in summer. Mortality is associated with human/wolverine interactions and considered a primary limiting factor in wolverine numbers. Population viability of the species can be reduced where there is loss of large areas of habitat with limited human access. The occurrence of wolverines is probably sporadic in the area because of their wide ranging habits. Local sightings have included the Granite Mtn area about 8 miles northwest of the project area (Appendix B).

### 5.3 USFS SENSITIVE SPECIES - FISH

Table 3 lists the USFS Sensitive fish that occur within the Idaho Panhandle National Forest, and as such, may occur or be affected by the proposed project. The species list was obtained from USFS staff in the Priest Lake Ranger District (Dekome, pers. comm. 2001, 2002). Bull trout occurrence has been discussed in Section 5.1.6. Only westslope cutthroat trout and torrent sculpin could potentially occur within the project area—thus there will be no further discussion of sturgeon, burbot, or interior redband trout.

**Table 3**
**USFS Listed Fish Species which occur in the Idaho Panhandle National Forest**

| Common Name | Species | Listing | General Habitat/Locations[1] |
|---|---|---|---|
| bull trout | *Salvelinus confluentus* | threatened | Known to be Priest Lake year-round and spawn and rear in Granite Creek |
| burbot | *Lota lota* | species of concern | Only found in the Kootenai River in northern Idaho [2] |
| interior redband trout | *Oncorhynchus mykiss gibbsi* | NMFS | Only found in the Kootenai River in northern Idaho. Also in the Clearwater River system and other areas to the south [2] |
| torrent sculpin | *Cottus rhotheus* | sensitive | Found in the Kootenai River in northern Idaho and Montana, in the Clearwater River system, unknown if if the Priest Lake basin[1,2] |
| westslope cutthroat trout | *Oncorhynchus clarki lewisi* | species of concern | Known to be in Priest Lake year-round and spawn and rear in Granite Creek; possible, but not sighted in, Reeder Creek |
| white sturgeon | *Acipenser transmontanus* | endangered | Only found in the Kootenai River in northern Idaho [2] |

[1] Information from Davis, Rothrock, Mahroney (USFS, DEQ, Kalispell Tribe, pers. comm. 2002)
[2] Information from Internet sources: StreamNet

### 5.3.1 Westslope cutthroat trout

Westslope cutthroat trout are listed as "sensitive" by Region 1 of the USFS and are "species of special concern" by the State of Idaho as well as the USFWS. On July 10, 1998, the USFWS issued a 90-day finding and commencement of status review for the petition to list westslope cutthroat trout as threatened under the ESA. This decision not to list the species was made in spring 2000.

*Life History and Habitat Requirements*
Westslope cutthroat trout are native to the Priest Lake drainage basin. Three life forms are present: resident (those which remain in river tributaries throughout their life); fluvial (migratory populations which use river tributaries for early rearing and spring spawning as adults—and migrate to rivers as they mature); and adfluvial (as in fluvial populations though they migrate in fall back to lake habitats as they mature).

Their preferred habitat is cold, clear streams with rocky, silt-free substrates for spawning and slow deep pools for feeding resting and overwintering. Cutthroat trout use pools about 70 percent of their life. Cover is important as well as a set of diverse stream habitats.

*Distribution within the Project Area*
Native to northern and east-central Idaho, northwest Montana, and portions of Washington, populations of westslope cutthroat trout (especially migratory populations) have declined since historical records, largely due to habitat degradation, overexploitation, migration

blocks (dams), and competition and interbreeding with introduced rainbow trout. Formerly, westslope cutthroat trout had the largest distribution of all subspecies of cutthroat trout. Within the project area, Granite Creek serves as a migratory and spawning path and supports year-round residents (Davis, pers. comm. 2002, Rothrock, pers. comm. 2002).

### 5.3.2 Torrent Sculpin

Principally occurring in the Columbia River Basin of Oregon, Washington, Idaho, and watersheds of British Columbia, the distribution in Idaho appears to be limited to the Kootenai River system west of the Continental Divide. Thought to be restricted to river systems of the Columbia River Basin west of the Continental Divide, collections made in Montana over the last 20 years include the Tobacco River, Fortine Creek, Libby Creek and the Yaak River (Stanton, no date). The occurrence of torrent sculpin in the project area is not known (Rothrock, pers. comm. 2002).

Torrent sculpins inhabit fast, clear streams with a stable bottom of gravel and rubble (Brown 1971, Wydoski and Whitney 1979, Finger 1982, Holton and Johnson 1996). They live in runs and/or riffles with rubble dominating the stream floor.

Pre-spawning upstream movements (January-March), and post-spawning downstream movements (April-June) have been reported in Washington (Thomas 1973, Hendricks 1997). Beginning in spring with low water temperatures (April and May), the sculpins breed and lay many eggs. Eggs are laid under rocks or logs (Bailey and Bond 1963). The female abandons the nest and male remains with the eggs. Incubation ranges from 21 to 28 days, and males will remain with the young up until they begin feeding (Crossman & Scott, 1973). Adult torrent sculpins prefer stoneflies, caddisflies and mayflies (Brusven & Rose, 1981).

## 5.4 USFS SENSITIVE SPECIES - PLANTS

Plant species lists were obtained from the USFS botanist (Hammet pers. comm. 2001 and 2002). Table 4 lists those species are considered for this proposed project. Ute ladies' tresses are discussed in Section 5.1.7. Those species listed with "yes" in the fourth column of Table 4 may potentially occur within the project bounds and are further discussed. For this project and document, the other species were eliminated from further consideration chiefly due to lack of specific habitat requirements within the project area (e.g., many species in Table 4 require (or are primarily found in) *Sphagnum* bogs—since such habitat is not present within the project area, the plants are dismissed from further analysis).

## Table 4
## USFS Sensitive Plant Species and Habitat

| Status and Species | Common Name | Habitat | Habitat Occurs in Project Area? |
|---|---|---|---|
| **Threatened** | | | |
| *Howellia aquatilis* | water howellia | vernal pools, aquatic | no |
| *Spiranthes diluvialis* | Ute ladies' tresses | deciduous riparian | no |
| *Silene spaldingii* | Spalding's catchfly | dry grassland | no |
| **Sensitive** | | | |
| *Andromeda polifolia* | bog rosemary | *Sphagnum* bogs | no |
| *Asplenium trichomanes* | maidenhair spleenwort | rock seeps in moist/ wet forest | no |
| *Aster junciformis* | rush aster | fens and bogs | no |
| *Astragalus microcystis* | least bladdery milkvetch | mesic forests | yes |
| *Betula pumila* | dwarf birch | fens and bogs | no |
| *Blechnum spicant* | deer fern | moist/ wet forest | yes |
| *Botrychium ascendens* | upswept moonwort | wet forest | yes |
| *Botrychium crenulatum* | dainty moonwort | wet forest | yes |
| *Botrychium lanceolatum* | triangle moonwort | wet forest/ moist forest | yes |
| *Botrychium minganense* | Mingan moonwort | wet forest/ moist forest | yes |
| *Botrychium montanum* | western goblin | wet forest | yes |
| *Botrychium paradoxum* | peculiar moonwort | wet forest/ moist forest | yes |
| *Botrychium pedunculosum* | stalked moonwort | wet forest | yes |
| *Botrychium pinnatum* | northwestern moonwort | wet forest/ moist forest | yes |
| *Botrychium simplex* | least moonwort | wet forest/ moist forest | yes |
| *Buxbaumia aphylla* | bug-on-a-stick lichen | subalpine | no |
| *Buxbaumia viridis* | green bug-on-a-stick | soil, subalpine | no |
| *Carex buxbaumii* | Buxbaum's sedge | peat bogs, marshes, fens | no |
| *Carex chordorrhiza* | string root sedge | peatlands | no |
| *Carex comosa* | bristly sedge | *Sphagnum* bogs | no |
| *Carex flava* | yellow sedge | rich fens, bogs | no |
| *Carex leptalea* | bristle-stalked sedge | peatlands, lake margins | no |
| *Carex livida* | pale sedge | bogs and fens | no |
| *Carex paupercula* | poor sedge | *Sphagnum* bogs, fens | no |
| *Carex xerantica* | dryland sedge | subalpine | no |
| *Cetraria subalpina* | iceland-moss lichen | cold forest/subalpine | no |
| *Cicuta bulbifera* | bulb-bearing water hemlock | marshes, fens, shallow standing water | no |
| *Collema curtisporum* | tarpaper lichen | deciduous riparian | yes |
| *Cypripedium parviflorum* | yellow lady's slipper | bogs, damp mossy woods, seeps | yes |
| *Drosera intermedia* | spoon-leaved sundew | *Sphagnum* bogs and fens | no |
| *Dryopteris cristata* | crested shield fern | bog margins, fens, wet meadows, wet forested margins of marshes | no |
| *Epilobium palustre* | swamp willow-weed | marshes, bogs, and fens | no |
| *Epipactis gigantea* | giant helleborine | warm or cold springs, lake margins | yes |
| *Eriophorum viridicarinatum* | green-keeled cotton grass | cold peatlands | no |
| *Gaultheria hispidula* | creeping snowberry | *Sphagnum* bogs, fens, wet forested margins | no |
| *Hookeria lucens* | clear moss | cedar forests, wet shaded areas, soil, logs, or swampy areas | yes |
| *Hypericum majus* | large Canadian St. John's wort | bogs, fens, marshes, mud flats | no |
| *Iris versicolor* | blue flag iris | fens | no |
| *Lycopodiella inundata* | northern bog clubmoss | *Sphagnum* fens, bogs | no |
| *Lycopodium dendroideum* | ground pine | moist mid-seral to mature forest | yes |
| *Meesia longiseta* | Meesia | bogs | no |
| *Muhlenbergia racemosa* | green muhly | *Sphagnum* bogs, fens | no |

**Table 4 (continued)**
**USFS Sensitive Plant Species and Habitat**

| Status and Species | Common Name | Habitat | Habitat Occurs in Project Area? |
|---|---|---|---|
| *Petasites sagittatus* | arrowleaf coltsfoot | wet to moist areas | **yes** |
| *Phegopteris connectilis* | northern beechfern | wet, mature cedar forests, riparian areas | **yes** |
| *Polystichum braunii* | Braun's holly fern | very moist, mature cedar/hemlock forests in riparian zones | **yes** |
| *Rhynchospora alba* | white beakrush | shrub/*Sphagnum* peatlands, on floating moss | no |
| *Salix candida* | hoary willow | wet open sites | no |
| *Salix pedicellaris* | bog willow | *Sphagnum* peatlands, boggy meadows | no |
| *Scheuchzeria palustris* | pod grass | fens and bogs | no |
| *Scirpus hudsonianus* | Hudson's bay bulrush | fens and *Sphagnum* bogs | no |
| *Scirpus subterminalus* | water clubrush | shallow boggy margins of ponds, lakes, and sloughs | no |
| *Sphagnum mendocinium* | Mendocine peatmoss | *Sphagnum* peatlands | no |
| *Streptopus streptopoides* | krushea | mature to old growth forests | **yes** |
| *Triantha occidentalis* | short-styled sticky tofieldia | *Sphagnum* bogs | no |
| *Trientalis arctica* | northern starflower | *Sphagnum* bogs, fens, wet forested margins | no |
| *Vaccinium oxycoccos* | bog cranberry | bogs, fens, and wet forested margins | no |

Plant species with a bolded "yes" in the fourth column of the above Table could potentially occur in the project vicinity.

Since the construction area is limited to the gravel road with a few areas for equipment staging, if the plants occur within the USFS-administered lands in the project area, they would likely only occur in the proposed treatment site, or in the riparian wetland area (outside of access road ROW) in the Elkins Resort area(see Section 4.1.3).

# *6.0 ANALYSIS OF EFFECTS*

## 6.1 GENERAL

In general, the vegetation which will be affected as a result of construction of the treatment facility, and collection systems includes second-growth forested coniferous vegetation, and disturbed roadside vegetation. Excavation for the lagoon and attendant facilities will occur in an area that has been logged (Appendix D, Photograph 1). The area needed for the open lagoon is 2 acres and the sprayfield is about 22 acres. All vegetation in the lagoon area would be removed; however, the sprayfield area would be maintained as a "tree plantation".

Areas to the west and east (Figure 3) are designated "old growth". Except for a roughly 20-foot wide easement along an existing undeveloped access road through which the collection system sewage will be directed west past Reeder Bay Road to the actual lagoon site, any further disturbance to these areas (such as land clearing or road building) is not part of the proposed water sewage treatment project.

All other piping installations (collection systems) would be located in the existing roadways - thus effects to vegetation includes only roadside (ruderal) species. These roadside areas are restorable—that is, after vegetation removal and construction is complete, these areas would be re-seeded with an erosion control mix. After time, native and typical roadside vegetation would re-colonize these easements. Thus, permanent vegetation impacts would total 2 acres. As the effluent used in the irrigation sprayfield is minimally treated but disinfected and would be applied at rates less than what the vegetation can use, it is not considered a permanent vegetation impact.

Treated sewage would be used as irrigation for a sprayfield (Section 2.4.2). The discharge would flow into the soil column and be utilized by the plants. There should be no excess water discharges which could affect surface waters nor would the discharge volumes be sufficient to enter the groundwater and adversely affect downslope vegetation, habitat, or domestic wells.

Other general effects can be summarized as temporal impacts related specifically to the period of construction: air quality (minimal impact—but present from heavy equipment use during construction), noise (heavy equipment use), human disturbance factor (increased activity during construction, including potential for trash, food, etc.), increased traffic (workers and equipment movement during construction), and potential for groundwater involvement, especially in trenching areas near the lakefront properties.

## 6.2 SPECIFIC

This section is a discussion of the individual federally and USFS-listed species that potentially could occur within the project area, and could potentially be affected by activities as a result of the installation of the sewage treatment facility and collection system. Where appropriate, direct, indirect, and cumulative effects are discussed for the species addressed. The effects determinations are assumed judgments based on available habitat, species presence, and likelihood of impact. Table 6 summarizes effects determinations for all species addresses in the analysis.

### 6.2.1 Federally Listed Species

6.2.1.1 Gray Wolf

*Direct Effects*

The dominant construction activities will include the excavation for the lagoon and its attendant buildings, and the trenching for the collection system. The collection system activities will take place in already disturbed environments (roadsides and sparse residential, commercial, or recreational areas)—thus after construction is complete, activities as a result of the proposed project will not add disturbances and noise greater than what already exists (local logging, road repair, house construction, etc.). Thus no direct effects to wolf are anticipated as a result of these activities.

The lagoon itself will be fenced; the rest of the site will be left in essentially the same condition as it already exists. Thus after construction, only minimal additional human activities (maintenance) should occur as a result of this project.

This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the roads and logged forest will still be used/maintained as they are now), and there will be no significant effects on the wolf's prey base (loss of food source) or critical habitat (i.e., denning areas).

*Indirect Effects*
Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the gray wolf. Being fairly secretive, it is unlikely in the first place, that wolves would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the gray wolf's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the gray wolf. However, no known significant activities are proposed in the region that could affect the continuance of the wolf as a species. **Thus, this report proposes a determination of *no impact (NI)*.**

6.2.1.2 Selkirk Mountain woodland caribou

*Direct Effects*
There would be no direct effects to caribou or its habitat because the proposed actions are located outside the designated recovery area. Habitat effectiveness would not change from existing condition. There have been no sightings of caribou in or near the project area (Figure 5).

*Indirect Effects*
Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the caribou. Being more associated with higher elevation areas, it is unlikely that caribou would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the caribou's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the caribou. However, no known significant activities are proposed in the region that could affect the continuance of the caribou as a species. **Thus, this report proposes a determination of *no impact (NI)*.**

6.2.1.3 Bald Eagle

*Direct Effects*
Since the proposed project activities will take place mostly on access roads, in a logged forest area, and well away from known eagle nests, no direct effects on the nesting bald eagles will occur. There are no plans to remove any "potential" perch trees for wintering bald eagles. However, minor temporary construction-related disturbance to potential perching or roosting individuals in the project area could occur if the project is under construction during the wintering months (October to March).

These determinations are based on the fact that no substantial change in human-based activities in the project area will occur (activities are reduced to short-term temporary construction-related impacts), and there will be no significant effects on the eagle wintering food sources (fish in Granite and Reeder creeks and the lake), or nests.

*Indirect Effects*
Indirect effects such as water, noise, or air quality degradation can all affect potential wintering activities of the bald eagle. Since appropriate BMP's will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the bald eagle's continued existence. Since the project is a wastewater treatment facility, the potential for hazardous spills into either the open water bodies is not expected to occur. Otherwise water quality degradation could affect fish stocks (bald eagle prey base). Thus indirect effects that could adversely affect the species as a whole are unlikely.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the bald eagle. However, no known significant activities are proposed in the region that could affect the continuance of the bald eagle as a species. Thus this report forwards the determination of ***may*** (temporarily, during construction) ***impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

### 6.2.1.4 Canada Lynx

*Direct Effects*

As in the effects analysis for gray wolf, the construction activities will take place in areas well away from any large areas of remote, quiet habitat. Thus no direct impacts to the Canada lynx will occur. This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the access roads, rural residences, and the logged forest area will still be used as they are now, and there will be no significant effects on the lynx's prey base (loss of food source) or critical habitat (i.e., denning areas). The construction activities will take place along existing disturbed access roads and in logged forest areas, well away from any large areas of remote, quiet habitat, no direct effects on the Canada lynx are anticipated.

These determinations are based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the access roads, golf course, and logged forest will still be used as they are now), and there will be no significant effects on the lynx's prey base (loss of food source) or critical habitat (i.e., denning areas).

*Indirect Effects*

Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the Canada lynx. Being fairly secretive, it is unlikely in the first place, that lynx would venture toward the project area from their "normal" remote habitat. It is also unlikely that during construction, any individuals would approach the project site. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the Canada lynx's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely.

*Cumulative Effects*

Logging, recreational use, development, and mining are all possible actions that could potentially affect the Canada lynx. However, no known significant activities are proposed in the region that could affect the continuance of the lynx as a species. **Thus, this report proposes a determination of *no impact (NI).***

### 6.2.1.5 Bull Trout

*Direct Effects*

Bull trout are known to occur in Priest Lake, migrate through Granite Creek (within the project area), and spawn in higher reaches of Granite Creek. No construction-related activities are proposed in the lake. Along Reeder Bay Road, Granite Creek will be crossed by hanging the sewer lines from the bridge—thus there should be no direct impacts to the Granite Creek fisheries, nor any channel or substrate modification that could adversely affect the bull trout. There are no bull trout reported in Reeder Creek (Davis pers. comm. 2002).

This determination is based on the fact that there will be no substantial change in the lake, or creek where bull trout are present. No impact to critical habitat (i.e., spawning areas) will occur.

*Indirect Effects*
Indirect effects such as water quality degradation can affect potential migration of the bull trout. Since appropriate BMP's will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the bull trout's continued existence. Since the project is a wastewater treatment facility, the potential for hazardous spills into Granite Creek or Priest Lake is not likely. Otherwise water quality degradation could affect fish. Thus indirect effects that could adversely affect the species as a whole are unlikely.

*Cumulative Effects*
Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Habitat degradation over the entire Priest Lake basin has occurred and is still occurring to some degree. Other activities such as logging and road construction, residential and recreational use all affect water quality into the river and streams in the area.

Since bull trout are known to occupy Priest Lake and Granite Creek, but no impacts to bull trout habitat *per se* should occur in that area, there should be no significant effects on the continued existence of bull trout as a result of the proposed project. However, in the event of a catastrophic failure, water quality entering Priest Lake could be compromised, at least locally. The USFS does not administer jurisdiction over Granite Creek or Priest Lake—thus impacts discussed here are for the general vicinity. Thus the project ***may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.1.6 Grizzly bear

*Direct Effects*
The proposed project will not add disturbances and noise much greater than what already exists (local logging, road repair, house construction, etc.). Thus no direct effects to grizzly bear are anticipated as a result of these activities.

The lagoon itself will be fenced; the rest of the site will be left in essentially the same condition as it already exists. Thus after construction, only minimal additional human activities (maintenance) should occur as a result of this project.

This determination is based on the fact that no substantial change in human-based activities in the existing habitat of the project area will occur (the roads and logged forest will still be used/maintained as they are now), and there will be no significant effects on the bears' food source or critical habitat (i.e., denning areas). The Lakeshore BMU borders the northern portion of the proposed action area.

*Indirect Effects*
Indirect effects such as water, noise, or air quality degradation can all affect potential occurrence of the grizzly bear. It is unlikely that during construction, grizzly would venture toward the project area from their "normal" remote habitat. Since appropriate Best Management Practices (BMP's) will be used, and hazardous spills protocols will be implemented, it is unlikely that temporary construction-related impacts would affect the grizzly bear's continued existence. Thus indirect effects that could adversely affect the species as a whole are unlikely. Bears could potentially be interested in trash or refuse left by construction workers but this problem could be eliminated or reduced through proper education and instruction for the construction and maintenance crews.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the grizzly. However, no known significant activities are proposed in the region that could affect the continuance of the grizzly as a species. No prey base loss is likely to occur. Other activities that are occurring the Priest Lake basin include logging, recreation, hunting, and other forms of human disturbance. **Thus, this report proposes a determination of *no impact (NI)*.**

6.2.1.7 Ute ladies' tresses

*Direct Effects*
Habitat for Ute ladies' tresses is not present in the project area. The habitat is coniferous forest or disturbed roadside areas. As described in Section 3.4.2, the floodplain habitat and vegetation requirements for Ute ladies' tresses are quite specific. Thus the project **will have no impact (NI) on the Ute ladies' tresses**.

### 6.2.2 USFS Sensitive Species - Animals

6.2.2.1 Black-backed woodpecker

*Direct Impacts*
Mature and old growth forest with 4 or more snags per acre are present in the eastern portion of the treatment site (east of Reeder Bay Road). But since the home range can be up to 800 acres, it is unlikely that black-backed woodpeckers nest at the treatment site—however, they may use the area for foraging. The USFS reports sightings of black-backed woodpeckers within 3 miles of the project area (Section 5.2.1, Appendix B). Due to the small size of the old growth area at the treatment site, and since no activities are proposed in that area, it is highly unlikely that any direct impacts to this species will occur.

*Indirect Impacts*
Indirect impacts such as noise, or activity may disrupt activities of the woodpecker should they occur during the construction phase of the project. The temporary construction-related activities should not greatly increase the disturbances already present with regard to traffic along Reeder Bay Road, or residential building east of the treatment site area.

*Cumulative Effects*
Loss of mature and old growth pine forests through logging, mining, or increases in recreational development all could affect potential habitat for black-backed woodpecker. Many of the these forests are being harvested because of infestations of pine beetles, yet it is this prey base coupled with standing dead trees that supports black-backed woodpecker populations. No known large-scale logging operations that could reduce remote habitat are proposed. No forests with numerous snags/acre appear to be slated for logging. However, the watersheds near the project vicinity could potentially be logged in the future; thus this report suggests that although habitat does not seem to be present in the project vicinity, activities associated with the project ***may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.2.2 Boreal toad

*Direct Impacts*
Since the collection system uses existing roadways, and no creeks, streams, wetlands, or other water bodies occur within the treatment site, direct impacts to the boreal toad are unlikely and not anticipated. However there have been local sightings (Section 5.2.2).

*Indirect Impacts*
Indirect impacts such as stream sedimentation or disruption of breeding grounds through disturbance in stream channel morphology or wetlands is not likely to occur. The USFS does not have jurisdiction over the creeks where boreal toads could possibly occur.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the boreal toad. However, no known significant activities are proposed in the region that could affect the continuance of the toad as a species. Since the toad could potentially use the Granite Creek or Reeder Creek corridors, and they can move readily in upland areas, this report conservatively proposes a determination of ***may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.2.3 Coeur d'Alene salamander

*Direct, Indirect, and Cumulative Impacts*
Neither the CDC nor the USFS have identified occurrence of this species in or near the project area. Since the Coeur d'Alene salamander is not known to occur in the Granite and Reeder Creek corridors, it is unlikely that any direct impacts to the species will occur. Thus report finds that the proposed project should ***have no impact (NI) on the Coeur d'Alene salamander.***

6.2.2.4 Common loon

*Direct and Indirect Impacts*
Common loons are not documented in the project area (CDC 2002, Layser, pers. comm. 2002), however Upper Priest Lake supports nesting loons. No impacts to nearshore nesting areas or islands is proposed, thus direct or indirect impacts to this species as a result of the proposed project are not anticipated.

*Cumulative Effects*
Loss of habitat and food sources is the primary cause of decline of the common loon. There is no known activity occurring or likely to occur within the project watershed that could potentially affect the loon. Thus this report returns a finding of ***no impact (NI)*** **to the common loon** as a result of the proposed project.

6.2.2.5 Fisher

*Direct and Indirect Impacts*
To assess potential effects and compare alternatives, the analysis applied methods and management guidelines from "Fisher Biology and Management in the Western United States". "High" integrity areas are those with the lowest road densities.

Fishers are associated with extensive mature coniferous forests, and use hollow logs, holes in the ground, and other cavity-type dens. These features do not occur within the project area. Cavities in large snags where natal dens occur are not present in the project area. Openings, such as the Reeder Bay road are avoided (USFS 1999). Thus no direct or indirect impacts to fisher are likely to occur as a result of the proposed stream crossing work.

*Cumulative Effects*
Habitat loss of extensive forests through logging, road building, and disruption to feeding and denning area could all negatively affect fisher populations. Logging to remove snags would especially be deleterious. Logging operations in the area could affect the species, although the scale of such logging areas is not known. Thus this report recommends a determination of ***no impact (NI)*** **on the fisher**.

6.2.2.6 Flammulated owl

*Direct and Indirect Impacts*
Since preferred habitat typically is mature and old growth ponderosa pine forest with open canopies above 3,000 feet elevation, ponderosa pine forest is not present in the project area, and Layser of the USFS reports occurrences of flammulated owls greater than 3 miles from the project area, it is unlikely that any direct or indirect impacts to flammulated owls should occur.

*Cumulative Effects*
Loss of habitat and food sources could be the cause of decline of the flammulated owl. There is no known activity occurring or likely to occur within the project watershed that could potentially affect the owl. Thus this report returns a finding of ***no impact (NI)*** **on the flammulated owl**.

6.2.2.7 Harlequin duck

*Direct Impacts*
The CDC reports sightings of this species along Granite Creek from its mouth some distance upstream. Since the proposed activity in the vicinity of Granite Creek will be hanging the sewer line along the bridge (on Reeder Bay Road), no significant impacts to harlequin ducks should occur. Note also that that area is not within USFS-administered lands.

*Indirect Impacts*
Harlequin ducks can be affected by disturbance within approximately 200 feet of a nesting stream. Thus, in the lower reaches of Granite Creek toward its mouth, proposed collection system installation activities in the area could disturb harlequin ducks temporarily, but since no activities are proposed within or near the creek, indirect impacts which could jeopardize the continued existence or move the harlequin duck toward federal listing are not anticipated.

*Cumulative Effects*
Since habitat is localized in the vicinity and no disruption to prey base or breeding grounds is expected, this report recommends a determination of ***may*** (temporarily, during construction) ***impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.2.8 Northern Bog Lemming

*Direct, Indirect, and Cumulative Impacts*
Habitat for Bog lemmings (cold sphagnum bogs or meadows dominated by sedges) with plant species such as bog birch, pale sedge, sundew, and bog buckbean is not present within the project area. Thus no direct, indirect, or cumulative effects to this species should occur as a result of the proposed activities. This report concludes a finding of ***no impact (NI)*** **to the northern bog lemming**.

6.2.2.9 Northern Goshawk

*Direct and Indirect Impacts*
In the Lakeshore-Granite analysis area, there are two known territories, however, given the fact that the portion of old growth within the proposed treatment area is relatively small (in reference to normal ranges of the birds), and the old growth section is bisected by Reeder

Bay Road, it is unlikely that use in the project area is significant. Neither the USFS nor the CDC has documented any nests within six miles of the project area, however, numerous sightings in the area confirms its existence throughout the region. The prey base for the northern goshawk will not be altered nor is significant suitable habitat present. Thus this report suggests no direct or indirect impacts to this species.

*Cumulative Effects*
Logging, recreational use, development, and mining are all possible actions that could potentially affect the northern goshawk. No prey base loss is likely to occur as a result of this project. Thus, this report proposes a determination of ***may*** (temporarily, during construction) ***impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.2.10 Northern Leopard Frog

*Direct Impacts*
Known elevations of the habitat of the northern leopard frog are generally lower than the site elevation. It is unlikely that northern leopard frogs could inhabit any microniche in the treatment area. However, although the general range of the species does not coincide with that of the project area, considerable vegetation is present in some of the wetland areas near the Elkins Resort area that could potentially provide substrate for egg attachment. Since they may stray far from water, and hibernate in mud of "sluggish" streams, it is remotely possible that the leopard frog could occur in the project area. However, since no activities are proposed for wetlands or streams, no breeding activities would be disrupted. Thus direct impacts to breeding individuals are unlikely.

*Indirect Impacts*
Only through loss of habitat, breeding ground disruption (at the time of breeding) or heavy sediment-loading could the proposed actions affect the leopard frog. No indirect effects to the frog are likely to occur.

*Cumulative Effects*
Wetland losses and riparian area alteration are habitat changes that could affect the leopard frog. The proposed activities will not alter the riparian nature of the Reeder Creek or the Elkins Resort areas. This report thus concludes that as a result of the proposed sewage treatment collection system activities, the project (if leopard frogs are present) ***may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.2.11 Townsend's big-eared bat

*Direct and Indirect Impacts*
No caves or suitable nesting sites occur in the vicinity of the project. Since they also require fairly warm winter hibernation sites (42.8-53.6 degrees F), the cold winters of the Priest Lake area potentially preclude hibernation areas. CDC reports no documented occurrences of

Townsend's big-eared bats within five miles of the project area (CDC 2002), thus neither direct nor indirect impacts to this species as a result of the proposed activities are anticipated.

*Cumulative Effects*
There are no known activities that may affect potential breeding or feeding areas for this species. There will be no loss of preferred habitat. Thus activities associated with the project should have ***no impact (NI)*** **on Townsend's big-eared bat.**

6.2.2.12 White-headed woodpecker
Habitat specific to white-headed woodpecker is present within the proposed treatment area.

*Direct Impacts*
In Idaho this species is restricted to mature or old ponderosa pine and mixed coniferous forests at elevations between 3,600-7,400 feet during nesting season. The elevation of the proposed treatment site is one thousand feet below habitat typically occupied by white-headed woodpeckers, ponderosa pine does not dominate the forest, and neither the CDC nor the USFS (2002) report any sightings of this species within 6 miles of the project. Thus, direct or indirect impacts to this species are not anticipated.

*Cumulative Effects*
Since habitat is not present, and any potential loss of habitat or food sources is not anticipated, this report returns a finding of ***no impact (NI)*** **on the white-headed woodpecker.**

6.2.2.13 Wolverine

*Direct and Indirect Impacts*
Since this species inhabits remote, mountainous areas unaffected by human disturbance, and large expanses of remote areas are necessary to maintain stable populations, it is unlikely that there will any direct impacts to wolverine as a result of this project. The project area does not include suitable denning habitat, so the risk of disturbance during rearing is not a factor in this project. It is unlikely the project would affect wolverines. Neither the CDC nor the USFS (2002) report any sightings of this species within 6 miles of the project.

Cumulative Effects
Loss of remote mountainous habitat through logging, mining, or increased recreational development could all affect the habitat for the wolverine. No known large-scale logging operations that could reduce remote habitat are known. Thus this report suggests there will be ***no impact (NI) to the wolverine.***

### 6.2.3 USFS Sensitive Species - Fish

6.2.3.1 Westslope cutthroat trout

*Direct Impacts*
Direct impacts to spawning westslope cutthroat trout are not expected to occur as a result of installation of the collection system pipe installation. The proposed method of crossing of Granite and Reeder Creeks involves hanging the line from existing bridges, and no alterations to the creek channel, substrate, or riparian vegetation (potentially altering shading and thus water temperatures) are proposed. Thus no direct impacts to individuals or habitat are anticipated or proposed.

*Indirect Impacts*
With proper implementation of BMP's and hazardous spills protocol, water quality degradation can be avoided. Thus it is unlikely that temporary construction-related impacts would affect the continued existence of cutthroat. Future impacts should not occur as the sewage line would require little to no maintenance where it crosses Granite and Reeder Creeks.

*Cumulative Impacts*
Impacts to watersheds in the region include logging, recreation, and road building. Many of the adjacent tributary watersheds may be logged or have more road access in the future. If this is the case, it is likely that overall habitat for the westslope cutthroat trout could be compromised. Sedimentation and substrate alteration would be the greatest activities that could preclude or hinder migration to spawning grounds, or to potential spawning grounds themselves. Thus this report recommends the finding that the proposed stream crossing work ***may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (MIIH).***

6.2.3.2 Torrent sculpin
*Direct, Indirect, and Cumulative Impacts*
Torrent sculpins are not known to occur within the Granite Creek or Reeder Creek drainages. It is unlikely therefore, that any direct, indirect, or cumulative impacts to the torrent sculpin will occur as a result of the proposed action. As a safety precaution however, appropriate BMP's will be implemented to eliminate or reduced any impact to surface waters during bridge hanging (in Granite and Reeder Creeks). Since the fish do not appear to be present, and any potential loss of habitat or food sources are not anticipated, this report returns a finding of ***no impact (NI)*** **on the torrent sculpin**.

### 6.2.4 USFS Sensitive Species - Plants

Habitat for the plant species listed in Table 5 is potentially present within the either the treatment site area or the relatively less disturbed areas in the Reeder Creek-Elkins Resort area. I was conservative in my decision to survey for these species—some (e.g. *Cypripedium*) would not likely be in the project area.

**Table 5**
**Plant Species Potentially Occurring with the Project Area**

| Species | Habitat | Blooming/Identification Period |
|---|---|---|
| *Astragalus microcystis* | forested areas | May to July |
| *Blechnum spicant* | forested areas | essentially year round |
| *Botrychium ascendens* | moist areas in forested | summer |
| *Botrychium crenulatum* | mature forests | summer |
| *Botrychium lanceolatum* | moist, mature forests | summer |
| *Botrychium minganense* | wet meadows/seeps, occ. forests | summer |
| *Botrychium montanum* | moist, mature forests | summer |
| *Botrychium paradoxum* | moist, mature forests | summer |
| *Botrychium pedunculosum* | moist, mature forests | summer |
| *Botrychium pinnatum* | moist, mature forests | summer |
| *Botrychium simplex* | moist, mature forests | summer |
| *Collema curtisporum* | riparian areas, moist forests; almost always on cottonwood | year around |
| *Cypripedium parviflorum* | moist areas | May to June |
| *Epipactis gigantea* | lake margins, seeps | late June - early August |
| *Hookeria lucens* | wet shaded forests | most of season |
| *Lycopodium dendroideum* | shady forests | most of season |
| *Petasites sagittatus* | wet to moist open areas | April to June |
| *Phegopteris connectilis* | wet mature cedar forests | growing season (May to Oct) |
| *Polystichum braunii* | very moist forests | " |
| *Streptopus streptopoides* | mature shady old growth | July to August |

Surveys for these species are underway for the season 2002. If any sensitive plants (from Tables 4 or 5) are located, appropriate impact analyses and coordination with the USFS botanist will be initiated.

## *7.0 SUMMARY DETERMINATIONS*

Under the General Section 7 Consultation process (federal guidelines): the choices for determination of effects to listed species are: (1) no effect; (2) may affect, not likely to adversely effect; (3) may affect, likely to adversely effect; and (4) likely to jeopardize/adversely modify critical habitat. If the USFWS concurs with the findings presented in this document, effect determination #1 requires no action on the part of the USFWS; effect determination #2 requires written concurrence from the USFWS; and formal Section 7 consultation with the USFWS is required for the effect determinations #3 and #4 (USFWS 1993a). For USFS Sensitive species, the effects determinations are: (1) NI (no impact); (2) MIIH (may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species); (3) WIFV (will impact individuals or habitat with a consequence that the action may contribute to a trend toward federal listing or cause a loss of viability to the population or species); or (4) BI (beneficial impact).

The Effects Determinations shown in Table 6 are based on my experience, fieldwork, and the discussions above. Thus it is my opinion and finding that the proposed Granite Reeder Sewage Treatment Project will have little to no long-term effects on the continued survival of the federally-listed or USFS-sensitive species discussed in this document.

**Table 6**
**Effects Determinations for Federally Listed and USFS Sensitive Species**

| Listed Species | Effect Determination |
|---|---|
| Gray Wolf | NI* |
| Selkirk Mountain woodland caribou | NI |
| Bald Eagle | MIIH |
| Canada Lynx | NI |
| Bull Trout | MIIH |
| Grizzly Bear | NI |
| Ute ladies' tresses | NI |
| Burbot | NI |
| Interior redband trout | NI |
| Torrent sculpin | NI |
| Westslope cutthroat trout | MIIH |
| White sturgeon | NI |
| Black-backed woodpecker | MIIH |
| Boreal toad | MIIH |
| Coeur d'Alene salamander | NI |
| Common loon | NI |
| Fisher | NI |
| Flammulated owl | NI |
| Harlequin duck | MIIH |
| Northern bog lemming | NI |
| Northern goshawk | MIIH |
| Northern leopard frog | MIIH |
| Townsend's big-eared bat | NI |
| White-headed woodpecker | NI |
| Wolverine | NI |
| *Howellia aquatilis* | NI |
| *Silene spaldingii* | NI |
| *Andromeda polifolia* | NI |
| *Asplenium trichomanes* | NI |
| *Aster junciformis* | NI |
| *Astragalus microcystis* | MIIH** |
| *Betula pumila* | NI |
| *Blechnum spicant* | MIIH** |
| *Botrychium ascendens* | MIIH** |
| *Botrychium crenulatum* | MIIH** |
| *Botrychium lanceolatum* | MIIH** |
| *Botrychium minganense* | MIIH** |
| *Botrychium montanum* | MIIH** |
| *Botrychium paradoxum* | MIIH** |
| *Botrychium pedunculosum* | MIIH** |
| *Botrychium pinnatum* | MIIH** |
| *Botrychium simplex* | MIIH** |
| *Buxbaumia aphylla* | NI |
| *Buxbaumia viridis* | NI |
| *Carex buxbaumii* | NI |
| *Carex chordorrhiza* | NI |
| *Carex comosa* | NI |
| *Carex flava* | NI |
| *Carex leptalea* | NI |
| *Carex livida* | NI |
| *Carex paupercula* | NI |
| *Carex xerantica* | NI |
| *Cetraria subalpina* | NI |

**Table 6** (continued)
**Effects Determinations for Federally Listed and USFS Sensitive Species**

| Listed Species | Effect Determination |
|---|---|
| Plants (continued) | |
| *Cicuta bulbifera* | NI |
| *Collema curtisporum* | MIIH** |
| *Cypripedium parviflorum* | MIIH** |
| *Drosera intermedia* | NI |
| *Dryopteris cristata* | NI |
| *Epilobium palustre* | NI |
| *Epipactis gigantea* | MIIH** |
| *Eriophorum viridicarinatum* | NI |
| *Gaultheria hispidula* | NI |
| *Hookeria lucens* | MIIH** |
| *Hypericum majus* | NI |
| *Iris versicolor* | NI |
| *Lycopodiella inundata* | NI |
| *Lycopodium dendroideum* | MIIH** |
| *Meesia longiseta* | NI |
| *Muhlenbergia racemosa* | NI |
| *Petasites sagittatus* | MIIH** |
| *Phegopteris connectilis* | MIIH** |
| *Polystichum braunii* | MIIH** |
| *Rhynchospora alba* | NI |
| *Salix candida* | NI |
| *Salix pedicellaris* | NI |
| *Scheuchzeria palustris* | NI |
| *Scirpus hudsonianus* | NI |
| *Scirpus subterminalus* | NI |
| *Sphagnum mendocinium* | NI |
| *Streptopus streptopoides* | MIIH** |
| *Triantha occidentalis* | NI |
| *Trientalis arctica* | NI |
| *Vaccinium oxycoccos* | NI |

* federal effects determinations were as follows: "may affect, not likely to adversely affect" for all species but the Ute Ladies's tresses whose determination was "no effect"
**surveys for this species may change this determination

## *8.0 MITIGATION ACTIONS TAKEN TO PROMOTE RECOVERY AND CONSERVATION OF THE SPECIES*

Since a "no effect" determination for Ute ladies' tresses has been presented, no mitigation action is considered for this species. "May affect, but not likely to adversely effect" determinations were brought forth for gray wolf, caribou, bald eagle, bull trout, grizzly bear, and Canada lynx. However, since the likelihood of <u>any</u> effect of this project on gray wolf, caribou, grizzly bear, or Canada lynx, is extremely remote, no mitigating actions (aside from the assurance that overall watershed water quality is not compromised; trash and debris removed; and education on habits of the listed species) are presented for these species in this document. Since bald eagles and bull trout are known to use the physical space that would be considered within the project area, some mitigating actions to promote continued recovery and conservation of the species may be prudent.

## 8.1 BALD EAGLE

Potential disturbance to wintering bald eagles could be mitigated by implementing the wastewater treatment facility construction work outside the wintering months (October 31 to March 31). Since this is the snow season, construction would likely be undertaken during the summer months, and avoid the winter months. However, if it is necessary for construction to occur within this "window", it may be prudent to have a qualified biologist monitor presence/activities of bald eagle in the area during construction. Should construction activities appear to significantly disrupt feeding habits of eagles, then consultation with USFWS staff may be prudent to determine alternate timing of work, or modification of the type of disturbance.

## 8.2 BULL TROUT

As discussed in Section 3.5.3, seasonal migrations upstream to known spawning grounds in the upper reaches of Granite Creek occur on an annual basis, and it is likely that this occurs in fall as the water temperatures drop. There are no proposals to take any action within Granite or Reeder creeks or Priest Lake. Indirect effects to bull trout in Priest Lake could occur if there is some unexpected sewage discharge from a broken pipe or other disaster involving the collection system. If excess discharge or sewage lagoon failure would occur, it is possible that incompletely-treated sewage could be transported downstream into the vicinity of the lake. Depending on this hypothetical type of emergency, it cannot be determined if the lake would be affected by surface or subsurface flow. However, the likelihood of such a failure is highly improbable.

Since the collection system would cross Granite Creek along the existing bridge on Reeder Bay road, there could be indirect effects on water quality of the creek only if there were pipe failure. This event, too, is unlikely (Welch Comer pers. comm. 2002). Should any disaster or failure occur, the proper authorities including the FWS and DEQ would be immediately alerted, and remediative action taken in consult with the permitting agencies.

## 8.3 FISHERIES

Since no activities are planned to take place in streams, creeks, wetlands, or the lake, no mitigation other than appropriate Best Management Practices (BMP's) and other safeguards such as hazardous spills containment plans, etc., will be proposed. Should any agency representative have other concerns not identified in this document - coordination with the Granite-Reeder Water and Sewer District, engineers, and other consultants is recommended at the earliest date.

## 8.4 PLANTS

As stated in Section 6.2.4, surveys for USFS sensitive plants is on-going this field season. Should the surveys result in the identification of any populations of sensitive species, the USFS botanist will be immediately alerted and a coordinated effort to analyze potential impacts and possible remediative solutions will be initiated at the earliest date.

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# APPENDIX A
## US Fish and Wildlife Service Species List

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
*Upper Columbia Fish and Wildlife Office*
*11103 East Montgomery Drive*
*Spokane, Washington 99206*

March 20, 2002

Mr. Tom Duebendorfer
P.O. Box 167
Elmira, ID 83865

Subject: Species List for the Proposed Granite-Reeder Water Treatment Facilities Project, Bonner County, Idaho (File # 970.0900)

Reference Number: 1-9-01-SP-704

Dear Mr. Duebendorfer:

This responds to your September 6, 2001 request for a list of threatened and endangered species that may occur in the vicinity of the Proposed Granite-Reeder Water Treatment Facilities Project, Bonner County, Idaho. We understand that the project involves the construction of a water treatment facility for the Granite-Reeder Bay area. Please use the above reference number for all future correspondence regarding this project.

We have reviewed the information you provided. Our records indicate that the following listed and candidate species may occur in the vicinity of the project and could potentially be affected by it:

**Listed Species**

Endangered
Gray wolf *(Canis lupus)*
Selkirk Mountains woodland caribou *(Rangifer tarandus caribou)*

Threatened

Bald eagle *(Haliaeetus leucocephalus)*
Canada lynx *(Lynx canadensis)*
Bull trout *(Salvelinus confluentus)*
Grizzly bear *(Ursus arctos)*
Ute ladies'- tresses *(Spiranthes diluvialis)*

**Candidate Species**

Western yellow-billed cuckoo (*Coccyzus americanus*)
Slender moonwort (*Botrychium lineare*)

If there is federal agency involvement in this project (funding, authorization, or other action), the involved federal agency must meet its responsibilities under section 7 of the Endangered Species Act of 1973, as amended (Act), as outlined in Enclosure A. Enclosure A includes a discussion of the contents of a Biological Assessment (BA), which provides an analysis of the impacts of the project on listed and proposed species, and designated and proposed critical habitat. Preparation of a BA is required for all major construction projects. Even if a BA is not prepared, potential project effects on listed and proposed species should be addressed in the environmental review for this project. Federal agencies may designate, in writing, a non-federal representative to prepare a BA. However, the involved federal agency retains responsibility for the BA, its adequacy, and ultimate compliance with section 7 of the Act.

Preparation of a BA would be prudent when listed or proposed species, or designated or proposed critical habitat, occur within the project area. Should the BA determine that a listed species is likely to be affected by the project, the involved federal agency should request section 7 consultation with the U.S. Fish and Wildlife Service (Service). If a proposed species is likely to be jeopardized by the project, regulations require conferencing between the involved federal agency and the Service. If the BA concludes that the project will have no effect on any listed or proposed species, we would appreciate receiving a copy for our information.

Candidate species receive no protection under the Act, but are included for your use during planning of the project. Candidate species could be formally proposed and listed during project planning, thereby falling within the scope of section 7 of the Act. Protection provided to these species now may preclude possible listing in the future. If evaluation of the subject project indicates that it is likely to adversely impact a candidate species, we encourage you to modify the project to minimize/avoid these impacts.

If there is no federal agency involvement in your project, and you determine that it may negatively impact a listed or proposed species, you may contact us regarding the potential need for permitting your actions under section 10 of the Act.

If you would like information concerning state listed species or species of concern, you may contact the Idaho Department of Fish and Game, at (208) 334-3402.

This letter fulfills the requirements of the Service under section 7 of the Act. Should the project plans change significantly, or if the project is delayed more than 90 days, you should request an update to this response.

Thank you for your efforts to protect our nation's species and their habitats. If you have any questions concerning the above information, please contact Robert Newman at (509) 893-8017.

Sincerely,

Suzanne Audet

For Supervisor

Enclosure

cc: IDFG, Coeur d'Alene

## APPENDIX B
## Sightings of Listed Species and Historical Location Data (from USFS and CDC)

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Comments on Animal(s) | Comments on Habitat |
|---|---|---|---|---|---|---|---|---|---|---|
| Bald Eagle | Sighting | 1/11/91 | 61N | 4W | 16 | | | 1 | Resident bird observed at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/93 | 61N | 4W | 16 | SW | NE | 1 | Adult eagle flying just south of Granite Creek outlet. Observation occurred at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/10/93 | 61N | 4W | 4 | SW | | 1 | Adult perched on tree by shoreline near Lakeshore Trail just south of Twin Island.<br>1630 hours | |
| Bald Eagle | Sighting | 11/19/00 | 61N | 4W | 9 | | | 1 | Individual flew back and forth over lake in a north to south direction between relatively distant locations. Sighting occurred just south of the western Twin Island. | |
| Bald Eagle | Sighting | 12/12/00 | 61N | 4W | 20 | | | 1 | Perched in tree along shoreline at Ledgewood Picnic area, took flight shortly after my arrival. | |
| Bald Eagle | Sighting | 1/19/01 | 61N | 4W | 16 | | | 1 | Mouth of Granite Creek station, annual Bald Eagle survey, one adult flying over lake. | |
| Bald Eagle | Sighting | 2/11/01 | 61N | 4W | 5 | NE | | 2 | Two adults appeared to be feeding on something on the ice cover of Distillery Bay, two ravens in attendance, one eagle still had white on the midline of the wing, also saw one male Goldeneye with three females, one female merganser, and a pair of Horned G | |
| Bald Eagle | Sighting | 1/13/00 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/13/00 | 61N | 4W | 20 | | | 1 | One adult seen at Reeder Bay Campground station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/99 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/8/99 | 61N | 4W | 20 | | | 1 | One adult seen at Reeder Bay Capground station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/9/98 | 61N | 4W | 28 | SE | | 1 | One adult seen at Indian Creek Bay Northwest Edge along Pinto Point station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 1/12/96 | 61N | 4W | 16 | | | 1 | One adult seen at Mouth of Granite Creek station during annual Bald Eagle survey. | |
| Bald Eagle | Sighting | 11/8/96 | 61N | 5W | 12 | NW | NE | 1 | The eagle flew overhead from west to east near Watson Mountain | Mature saw timber, southwest aspect. |
| Bald Eagle | Sighting | 11/8/96 | 61N | 5W | 27 | NE | SW | 1 | In Bismark Meadow with ravens; possibly on deer carcass. | meadow |
| Bald Eagle | Sighting | 10/2/94 | 61N | 5W | 22 | NE | SW | 1 | Perched in a tree in Bismark Meadow. | meadow |
| Bald Eagle | Sighting | 6/18/83 | 61N | 5W | 14 | SW | | ? | [data entry note: no information on hardcopy for number of animals] | |
| Bald Eagle | Sighting | 4/20/83 | 61N | 5W | 14 | SW | SW | 2 | | |
| Bald Eagle | Sighting | 1/21/80 | 61N | 5W | 25 | SW | | 1 | Seen flying. | |
| Bald Eagle | Sighting | 4/7/92 | 61N | 5W | 23 | SW | SW | 1 | One adult soaring then landing in a tree near Highway 57 in front of Al Austin's house. Appeared to be watching four crows eating something alongside the highway. | |
| Bald Eagle | Sighting | 4/27/00 | 61N | 5W | 27 | NW | | 2 juveniles | Two, almost fully mature, eagles were feeding off a carcass in meadow surrounded by "anxious" ravens. | open meadow (Bismark Meadow) |
| Bald Eagle | Sighting | 4/30/00 | 61N | 5W | 22 | SE | | 2 | Two eagles were on the ground in the meadow approx. 150 yards from Highway 57 along with what I guessed was a Turkey Vulture (large bird). The eagles were identifiable when they "flared" their wings towards each other. | open meadow (Bismark Meadows) |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Comments on Animal(s) | Comments on Habitat |
|---|---|---|---|---|---|---|---|---|---|---|
| Bald Eagle | Sighting | 4/16/00 | 61N | 5W | 27 | | | 1 | The eagle was perched in a cottonwood at the edge of Highway 57 and the meadow. | Bismark Meadow |
| Bald Eagle | Sighting | 9/11/00 | 61N | 5W | 0 | | | 1 juvenile | Immature eagle was in roadside tree next to Bismark Meadows. Observer was in vehicle traveling along Highway 57 at approx. 0900 hours. | Bismark Meadows |
| Bald Eagle | Sighting | 4/7/92 | 61N | 5W | 23 | SW | SW | 1 | Eagle was soaring near Highway 57 in front of Al Austin's house. It then landed in a tall pine tree and seemed to be observing four crows eating something alongside the highway. approx. 1210 hours | |
| Bald Eagle | Sighting | 5/3/91 | 61N | 5W | 27 | SW | SE | 2 | Adult eagles chasing ravens away from carcass in Bismark Meadow at approx. 0700 hours. | |
| Bald Eagle | Sighting | 11/14/91 | 61N | 5W | 16 | SW | SW | 1 | One adult perched in timber near FR 2516 at approx. 1115 hours. | |
| Bald Eagle | Sighting | 9/30/96 | 62N | 4W | 9 | SE | NE | 1 | Juvenile on dead branch of WP on shore at Schreiber's. | |
| Bald Eagle | Sighting | 9/24/95 | 62N | 4W | 4 | | | 1 | Immature eagle perched on snag in Thorofare near the osprey nest north of Caribou Creek. | |
| Bald Eagle | Sighting | 5/21/94 | 62N | 4W | 9 | | | 1 | Immature eagle in cottonwood, harrassed by ravens. | |
| Bald Eagle | Sighting | 12/18/92 | 62N | 4W | 27 | NW | SE | 1 | One adult sitting on large dead tree by houses. Card has specific directions. Approx. 1300 hours | |
| Bald Eagle | Sighting | 5/24/92 | 62N | 4W | 10 | NW | | 2 | One adult and one immature. Adult perched in large cottonwood on west end of breakwater. Immature was flying over the end of the lake out of Mosquito Bay. Approx. 0600 and 1100 hours. | |
| Bald Eagle | Sighting | 5/23/93 | 62N | 4W | 9 | NE | SW | 1 | Adult flying northeast fromThorofare with fish. | |
| Bald Eagle | Sighting | 4/30/94 | 62N | 4W | 4 | | | 1 | Immature flying south above Thorofare just north of Caribou Creek. | |
| Bald or Golden Eagle | Sighting | 4/8/96 | 61N | 5W | 27 | NE | SW | 1 | Along Highway 57, eagle was perched in large WL observing crows on carrion. | |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caribou | Sighting | 7/4/99 | 61N | 4W | 0 | | | 1 | | Possible male with collar and green tag seen approx. two miles south of Indian Creek on the east side Lakeshore Road. | | Medium |
| Caribou | Hair | 6/11/97 | 61N | 5W | 23 | SW | | 1 | | Large clump of hair scraped off by animal rubbing against fallen trees. | Mixed forest, areas of timber harvest. | High |
| Caribou | Sighting | 5/3/89 | 62N | 4W | 9 | NW | | 1 | | Collared animal seen on shore while boating up the Thorofare. | near shrubfield/meadow | |
| | | | | | | | | | | | | |
| Grizzly Bear | Sighting | 10/25/95 | 61N | 5W | 14 | SW | | 1 | | Blond, grizzled hair, very large front shoulder hump, round dish-shaped face, behind Nordman store. | | |
| Grizzly Bear | Sighting | 7/9/90 | 62N | 4W | 32 | NW | NW | 1 | | | | |
| Grizzly Bear | track and scat | 8/31/99 | 62N | 5W | 17 | | | 1 | | | Mixed conifer and meadow mosaic. | High |
| Grizzly Bear | Track | 8/18/00 | 62N | 5W | 14 | NW | SE | 1 | | Tracks were in the middle of FR 1341. Observers were following up on a report of a Grizzly Bear in the area. [data entry note: section information may be incorrect because FR 1341 does not pass through this section] | | |
| Lynx | Sighting | 10/7/91 | 61N | 4W | 5 | NE | SW | 1 | | Biological Tech Lynx stood in road 2512 for ten seconds and then ran off into the timber. | | Medium |
| Lynx | Track | 3/20/97 | 61N | 5W | 17 | NW | NW | 1 | | Biologist Track set seen along road 1362 at stream crossing during snow track survey. | | High |
| Lynx | kill | 11/15/92 | 61N | 5W | 20 | NE | | 1 | | Animal taken with trap. | | High |
| Lynx | Sighting | 1/25/79 | 61N | 5W | 0 | | | 2 | | Biologist Observed during a winter survey for T& E species (Koehler & Hornocker 1979). [data entry note: township information on hardcopy is "60/61N"] | | High |
| Lynx | Sighting | 9/21/98 | 62N | 5W | 19 | | | 1 | | Recreation forester. Long legs and light coloration, cat ran across the road at approx. 2025 hours, near 8 mile marker on FR 302. | | Medium |
| Lynx | Sighting | 8/15/90 | 62N | 5W | 19 | SW | SW | 1 | | Forestry Tech It was crossing road 302 approximately one mile north of its junction with road 311. | Immature to mature THPL/TSHE forest | Medium |
| Wolf | Sighting/Tracks | 1/15/94 | 61N | 4W | 20 | | | 1 | | Animal observed 20 feet out kitchen window on slope beside house, saw tracks around house and heard howling. | White-tail Deer winter range, open south slope | |
| Wolf | Sighting | 7/21/90 | 61N | 4W | 21 | SW | | 2 | | Animals paralled observer for approx. 1/2 mile, arge, brownish, 32 in. in length, Cape Horn area. | | |
| Wolf | Sighting | 9/14/98 | 61N | 5W | 24 | NW | NW | 1 | | Seen near home 3/4 mile up Reeder Bay Road from Nordman. | | Low |

| Species | Type of Observation | Date of Observation | Township | Range | Section | 1/4 section | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wolf | Sighting | 7/15/98 | 61N | 5W | 23 | SW | | 1 | | Large animal, gray, seen along edge of property. | | |
| Wolf | Sighting | 9/23/91 | 61N | 5W | 12 | | | 1 | | Driveway to Turner/Moore's, approx. 100 yards in, west side of road by new cabin on left. | | |
| Wolf | Sighting | 8/18/85 | 61N | 5W | 23 | NW | | 1 | | Possible sighting, may have mistaken domestic dog for wolf. | Bismark meadows - wetland/grassland comlex. | |
| Wolf | Sighting/Tracks | 1/29/97 | 62N | 4W | 25 | SW | | 1 | 4 inches wide and 5 to 5.5 inches long, distinct claws | Extremely large animal with a large blocky head, yellowish color on sides, silver-gray on backside, tracks also seen, 30 second observation at a distance of 50 feet | riparian corridor | |
| Wolf | Sighting | 12/28/85 | 62N | 4W | 16 | | | 3 | | Two larger animals, third smaller and subservient/compliant. Two days later, deer carcass and tracks in area. | On frozen ice (approx. 24 inches thick) | |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black-backed Woodpecker | Sighting | 7/2/99 | 61N | 5W | 1 | SW | | 2 | | Seen along FR 1347 approx. 1/2 mile south of Fedar Creek Road junction. | old WP plantation. | |
| Black-backed Woodpecker | Sighting | 1/30/00 | 61N | 5W | 23 | NE | SW | 1 | | The woodpecker was on a WL that had an approx. 7 inch dbh and was adjacent to the road. This is the road that accesses Stimpson land just north of Al Austin's place and approx. 0.10 mile off of Highway 57. There was no yellow on the head so assume it wa | dense mixed conifer forest (WH habitat type) | |
| Black-backed Woodpecker | Sighting | 10/22/94 | 62N | 5W | 35 | NE | | 2 | | Feeding on GF snag. | | |
| Common Loon | Sighting | 1/13/95 | 61N | 4W | 27 | SW | SE | 3 | | Indian Creek Bay, ice cover estimated at 10%, seen during 1995 Bald Eagle Survey. | aquatic | |
| Common Loon | Sighting | 5/26/92 | 61N | 4W | 4 | | | 1 | | One loon by west Twin Island, heard more from the north, sounded like at least two more | aquatic | |
| Common Loon | Sighting | 4/21/91 | 61N | 4W | 20 | NE | | 2 | | Ledgewood campground, out from beach to south, swam towards beach, then spooked to other side of the lake | aquatic | |
| Common Loon | Sighting | 6/2/94 | 62N | 4W | 9 | SE | | 2 | | courtship activity, 200 feet runs of "broken wing activity", stop and look for other, they took turns, lasted 10 minutes | aquatic | |
| Common Loon | Sighting | 6/6/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, saw and heard one loon. | aquatic | |
| Common Loon | Sighting | 5/23/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, in morning and at midnight, swimming near or under dock. | aquatic | |
| Common Loon | Sighting | 5/22/96 | 62N | 4W | 9 | SE | | 3 | | Northern Priest Lake. At different times, loon 10-60 yards out in water swimming /fishing. | aquatic | |
| Common Loon | Sighting | 5/15/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake; bathing in water 50 yards out from dock. | aquatic | |
| Common Loon | Sighting | 5/13/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, heard a loon calling all day. | aquatic | |
| Common Loon | Sighting | 5/12/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, south of dock. | aquatic | |
| Common Loon | Sighting | 5/11/96 | 62N | 4W | 9 | SE | | 6 | | Northern Priest Lake, loons seen throughout the day, loons solitary or paired, one pair chasing and splashing each other. | aquatic | |
| Common Loon | Sighting | 5/9/96 | 62N | 4W | 9 | SE | | 3 | | Northern Priest Lake, two near south dock and one 50 yards southeast. | aquatic | |
| Common Loon | Sighting | 5/8/96 | 62N | 4W | 9 | SE | | 4 | | Northern Priest Lake and Thorofare, heard one in Thorofare, saw one fishing, saw two near Lion Creek. | aquatic | |
| Common Loon | Sighting | 5/7/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, saw loon 25 yards from dock, later heard one from the south. | aquatic | |
| Common Loon | Sighting | 5/6/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, saw loon in lake north of Indian Rock, heard one later on. | aquatic | |
| Common Loon | Sighting | 5/5/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, loon fishing at drop-off in the lake bottom. | aquatic | |
| Common Loon | Sighting | 5/4/96 | 62N | 4W | 9 | SE | | 2 | | Northern Priest Lake, loons fishing at the drop-off in the lake bottom. | aquatic | |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Common Loon | Vocalization | 5/1/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, several calls heard from the mouth of Lion Creek. | aquatic | |
| Common Loon | Vocalization | 4/29/96 | 62N | 4W | 9 | SE | | 1+ | | Northern Priest Lake, calls heard but loons not visible. | aquatic | |
| Common Loon | Sighting | 4/26/96 | 62N | 4W | 9 | SE | | 1 | | Northern Priest Lake, calls heard coming from the east. | aquatic | |
| Common Loon | Sighting | 4/18/96 | 62N | 4W | 9 | SE | | 2 | | Northern Priest Lake, approx. 150 yards from shore, facing east | aquatic | |
| Common Loon | Sighting | 5/30/94 | 62N | 4W | 9 | SE | | 1 | | Loons have been sighted here for several weeks. | aquatic | |
| Common Loon | Sighting | 5/14/94 | 62N | 4W | 9 | SE | | 1 | | Approx. half-way between Beaver Creek outlet and Beaver Creek campground, approx. 100 yards off shore, loon in winter plumage. | aquatic | |
| Common Loon | Sighting | 5/11/94 | 62N | 4W | 9 | SE | | 2 | | Two loons together in lake, approx. half-way between Beaver Creek and Beaver Creek campground and approx. 150 yards off shore, one in black and white breeding plumage, both diving for food. | aquatic | |
| Common Loon | Vocalization | 5/10/94 | 62N | 4W | 9 | SE | | 1 | | Heard loon near Thorofare. | aquatic | |
| Common Loon | Vocalization | 5/9/94 | 62N | 4W | 9 | SE | | 1 | | Heard loon near Beaver Creek outlet and Beaver Creek campground. | aquatic | |
| Common Loon | Sighting | 5/5/94 | 62N | 4W | 9 | SE | | 1 | | Between Beaver Creek and Beaver Creek campground, approx. 100 yards off shore | aquatic | |
| Common Loon | Sighting | 5/4/94 | 62N | 4W | 9 | SE | | 1 | | Approx. half-way between Beaver Creek and Beaver Creek campground, approx. 50 feet from shore. | aquatic | |
| Common Loon | Sighting | 4/24/93 | 62N | 4W | 9 | SE | NE | 4 | | Four adults rafting on Priest Lake between Tule Bay and Mosquito Bay, west of the outlet of the Thorofare | aquatic | |
| Common Loon | Vocalization | 4/19/93 | 62N | 4W | 16 | | | 1 | | Heard a loon calling several times | aquatic | |
| Fisher | Sighting | 6/10/97 | 61N | 5W | 5 | SW | | 2 | | Adult moved young across FR 1362 east spur approx. 40-50 feet from observer. | cedar/hemlock w/ Douglas Fir | High |
| Fisher | Track | 10/23/96 | 61N | 5W | 2 | NW | | 1 | | | cedar/hemlock w/ lodgepole, snow depth was 12-14 inches. | High |
| Fisher | Sighting | 8/7/00 | 62N | 4W | 16 | NE | SW | 1 | | Loped across FR 2512 near Tepee Creek. | dense, immature, saw to sapling stand | |
| Fisher | Sighting | 5/1/93 | 62N | 4W | 9 | | | 1 | | "Seemed a bit small, therefore possibly a marten. However, uniform dark brown color and scolded (growling, hissing, sounds)." Initially on ground and then climbed into cedar tree. [data entry note: the date of observation is described as "late May 199 | | Medium |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flammulated Owl | Vocalization | 10/11/94 | 61N | 5W | 1 | SE | | 1 | | Just above Media Creek Road | DF/GF/PP stand | |
| Harlequin Duck | Sighting | 5/20/98 | 62N | 5W | 30 | NE | NE | 2 | | Male and female pair swimming together in slack water along creek edge, observed during Harlequin Duck survey. | | |
| Harlequin Duck | Sighting | 5/5/97 | 62N | 5W | 29 | SE | | 2 | | A pair was observed loafing in slack water along the bank in the lower reach of Granite Creek during a survey | | |
| Harlequin Duck | Sighting | 5/26/89 | 62N | 5W | 29 | NW | | 2 | | Male and female flying upstream along Granite Creek | probably WRC/WH and maybe THPL/AFTI | |
| Harlequin Duck | Sighting | 7/19/00 | 62N | 5W | 29 | SE | NW | 1 juvenile | | Duck was sitting on rock in middle of rapidly flowing section of Granite Creek along road. Location of duck was approx. 2 miles past the end of the pavement on FR 302 and approx. 0.5 mile south of FR 311. "We searched for others but found northing." | | |
| Harlequin Duck | Sighting | 5/12/88 | 62N | 5W | 34 | SW | | 2 | | "pair of ducks mating in Granite Creek, seen from bridge" B. Rosenburg is a private citizen | | |
| Harlequin Duck | Sighting | 5/25/89 | 62N | 5W | 34 | SW | SE | 1 | | Saw duck while driving across bridge. It was sitting on a rock in the creek north of the bridge. Probably a male. | | |
| Northern Goshawk | Sighting | 2/12/91 | 61N | 4W | 31 | SE | NW | 1 | | Adult seen feeding on hare. | | |
| Northern Goshawk | Sighting | 5/13/00 | 61N | 4W | 8 | | | 1 | | Adult goshawk flew across Reeder Bay road heading west. Location of sighting was 5.7 miles north on road from Highway 57 intersection. | | |
| Northern Goshawk | Sighting | 6/19/93 | 61N | 5W | 13 | NW | NE | 1 | | Adult flew over fire. | | |
| Northern Goshawk | Sighting | 11/9/96 | 61N | 5W | 1 | SE | SE | 1 | | Adult seen near south ridgeline of Watson Mountain. | DF, PP, GF | |
| Northern Goshawk | Sighting | 11/10/96 | 61N | 5W | 1 | SE | NW | 1 | | Adult seen near Watson Mountain, just below ridge top. | mature sawtimber, transition zone between DF and PP, northwest aspect of cedar, GF, DF, hemlock. | |
| Northern Goshawk | Sighting | 7/17/96 | 62N | 4W | 29 | | | 1 | | Wail call in response to survey, visual sighting approx. 5 minutes after audio detection, nest from 1990 not located. | | |
| Northern Goshawk | Sighting | 7/17/95 | 62N | 4W | 30 | SE | SE | 1 | | Juvenile flew past observer and landed. It then flew in and around the observer and back from where it came. Units #24 and #17 of Distillery Bay. | Old growth between clearcuts | |
| Northern Goshawk | Sighting/Nest | 6/23/95 | 62N | 5W | 28 | SW | | 2 | | Call in response to survey, one adult and one fledgling were on the nest in a live White Pine | Mixed conifer - cedar and hemlock | |
| Northern Goshawk | Sighting | 8/1/90 | 62N | 5W | 32 | NE | | 1 | | Bird seen flying with rabbit | | |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northern Goshawk | Sighting | 3/26/92 | 62N | 5W | 9 | SE | | 1 | | Adult accipiter flying northwest to southeast parallel to FR 1373 along edge of old harvest unit. | | |
| Northern Goshawk | Sighting | 10/12/93 | 62N | 5W | 36 | NE | SW | 1 | | Brownish and grey accipiter with a black eye band was perched in Grand Fir half-way up Fedar Creek slide across from unit #14 of Granite Watson Timber Sale. Bird made two series of calls and flew into forest. [data entry note: unsure of the spelling of | | |
| Northern Goshawk | sighting/nest | 6/3/93 | 62N | 5W | 28 | SE | NW | 1 | | Adult responded to broadcast alarm call during Dusty Peak goshawk survey, nest found but activity undetected. | | |
| Northern Goshawk | Sighting/Nest | 7/17/92 | 62N | 5W | 28 | SE | NW | 2 | | Adults responded to broadcast wail call, active nest located. | | |
| Northern Goshawk | Unknown | 7/14/97 | 62N | 5W | 28 | | | 1 | | Adult responded to broadcast call, Dusty Peak area. | | |
| Northern Goshawk | Vocalization | 6/27/97 | 62N | 5W | 28 | | | 1 | | Goshawk responded to broadcast alarm call, no nest found. | | |
| Northern Goshawk | Nest | 6/4/99 | 62N | 5W | 28 | | | 1 | | Adult goshawk emitting wail call at nest site, nest assumed to be active. | | |
| Northern Goshawk | Sighting | 5/5/00 | 62N | 5W | 28 | | | 1 | | Goshawk flew in after broadcast of alarm call, no activity at either nest site. | | |
| Western Toad | Sighting | 1/1/92 | 61N | 4W | 5 | NW | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC5 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 6/3/00 | 61N | 4W | 20 | | | 1 | | Toad hid under log on beach at Ledgewood Picnic Area approx. 10 meters north of the shoreline at approx. 2000 hours. Toad was dark green and black and approx. 2 cm. long. | sandy public beach on lake | |
| Western Toad | Sighting | 6/19/99 | 61N | 5W | 0 | | | 1 | | Information collected for Charles Peterson, Idaho State University. Individual seen at the eastern base of Nickelplate Mountain, approx. 10 cm in length. | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 31 | SE | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC1 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 30 | SE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC3 [data entry note: only the year is provided for an observation date] | | |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 31 | SE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC4 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 5 | NW | | 4 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC5 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 6/14/99 | 62N | 4W | 5 | | | 2 | | Information collected for Charles Peterson, Idaho State University. Individuals were present along the Navigation trail in dry habitat. | | |
| Western Toad | Sighting | 1/1/93 | 62N | 4W | 20 | NE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG3 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/93 | 62N | 4W | 31 | NE | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG4 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/92 | 62N | 4W | 16 | NW | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG1 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/92 | 62N | 4W | 31 | SE | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot PG5 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/92 | 62N | 4W | 31 | SE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC1 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/92 | 62N | 4W | 30 | SE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC3 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/92 | 62N | 4W | 31 | SE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot CC4 [data entry note: only the year is provided for an observation date] | | |

| Species | Type of Observation | Date of Observation | Town ship | Range | Section | 1/4 sect | 1/4 of 1/4 | Number of Animals | Track/Stride description | Comments on Animal(s) | Comments on Habitat | Reliability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 16 | NW | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG1 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 20 | NE | | 1 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG3 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 31 | NE | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG4 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 1/1/91 | 62N | 4W | 31 | SE | | 2 | | Observed during a survey on the effects of timber harvest on small mammals and amphibians (Groves, 1994), sample plot OG5 [data entry note: only the year is provided for an observation date] | | |
| Western Toad | Sighting | 7/21/00 | 62N | 4W | 30 | NW | SE | 1+ | | Toad observed approx. 0.5 mile south of junction of FR 638 and FR 1347 at approx. 2300 hours after a Flammulated Owl survey in the Watson Timber Sale. Another possible Bufo boreas was seen on FR 638 as we headed east to the Reeder Bay Road but was not po | | |
| Western Toad | Sighting | 7/21/00 | 62N | 4W | 30 | NE | | 1+ | | Toad was observed 0.7 mile east of junction of FR 638 and FR 1347 at approx. 2300 hours after a Flammulated Owl survey in the Watson Timber Sale. Another possible Bufo boreas was seen on FR 638 as we were heading east towards Reeder Bay Road but this ind | | |
| Wolverine | Sighting | 7/5/91 | 62N | 5W | 25 | | | 1 | | Approximately 4 miles up Tango Creek road on north side of road. Approx. 2045 hours. | | |
| Wolverine | Sighting | 8/2/81 | 62N | 5W | 34 | SW | | 1 | | Sighted from Granite Creek road. | WRC/WH forest. | |
| Wolverine | Sighting | 7/12/81 | 62N | 5W | 34 | NE | | 1 | | Animal seen on road. | | |

## Appendix C
## Plant Species Observed Occurring within the Project Area
### (from 9/8/01, 10/24/01, and 4/18,19/02 surveys)

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Trees | *Abies grandis* | grandfir |
| | *Betula papyrifera* | paper birch |
| | *Larix occidentalis* | western larch |
| | *Picea engelmannii* | Englemann spruce |
| | *Pinus contorta* | lodgepole pine |
| | *Pinus monticola* | western white pine |
| | *Populus balsamifera* | black cottonwood |
| | *Pseudotsuga menziesii* | Douglas fir |
| | *Thuja plicata* | western red cedar |
| | *Tsuga heterophylla* | western hemlock |
| Shrubs | *Acer glabrum* | Rocky Mountain maple |
| | *Alnus incana* var *tenuifolia* | white alder |
| | *Amelanchier alnifolia* | serviceberry |
| | *Arctostaphylos uva-ursi* | kinnikinnick |
| | *Berberis repens* | Oregon grape |
| | *Ceanothus sanguineus* | redroot |
| | *Cornus sericea* ( = *C. stolonifera*) | redstem dogwood |
| | *Crataegus douglasii* var. *douglasii* | hawthorn |
| | *Gaultheria ovatifolia* | wintergreen |
| | *Holodiscus discolor* | ocean spray |
| | *Linnaea borealis* | twinflower |
| | *Lonicera involucrata* | honeysuckle |
| | *Pachistima myrsinites* | myrtle boxwood |
| | *Philadelphus lewisii* | mock orange |
| | *Rosa gymnocarpa* | baldhip rose |
| | *Rosa nutkana* | Nootka rose |
| | *Rosa woodsii* | Woods' rose |
| | *Rubus idaeus* var *peramoenus* | raspberry |
| | *Rubus leucodermis* | blackcap |
| | *Rubus parviflorus* | thimbleberry |
| | *Rubus vitifolius* | trailing blackberry |
| | *Salix lasiandra* | Pacific willow |
| | *Salix scouleriana* | Scouler willow |
| | *Spiraea betulifolia* | spirea |
| | *Spiraea douglasii* | hardhack |
| | *Symphoricarpos albus* | snowberry |
| | *Vaccinium globulare* | huckleberry |
| | *Vaccinium membranaceum* | huckleberry |
| | *Vaccinium caepitosum* | dwarf huckleberry |
| | *Vaccinium scoparium* | grouseberry |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Achillea millefolium* | yarrow |
| | *Agropyron repens* | quackgrass |
| | *Agrostis alba* (=*A. gigantea*) | redtop bentgrass |
| | *Agrostis scabra* | rough bentgrass |
| | *Agrostis stolonifera* | redtop bentgrass |
| | *Agrostis stolonifera* (var. *palustris*) | redtop bentgrass |
| | *Alopecurus pratensis* | meadow foxtail |
| | *Anaphalis margaritacea* | pearly everlasting |
| | *Angelica* sp. (?) | angelica |
| | *Antennaria racemosa* | everlasting |
| | *Apocynum androsaemifolium* | spreading dogbane |
| | *Aralia nudicaulis* | sarsaparilla |
| | *Asarum caudatum* | wild ginger |
| | *Bellis perennis* | English daisy |
| | *Calamagrostis rubescens* | pinegrass |
| | *Carex deweyana* (?) | Dewey's sedge |
| | *Carex pachystachya* | sedge |
| | *Carex scirpoidea* (?) | single spike sedge |
| | *Centaurea diffusa* | diffuse knapweed |
| | *Centaurea maculosa* | spotted knapweed |
| | *Cerastium arvense* | mouse-eared chickweed |
| | *Cerastium vulgatum* | chickweed |
| | *Chimaphila menziesii* | pipsissewa |
| | *Chimaphila umbellata* | pipsissewa |
| | *Chrysanthemum leucanthemum* | ox-eye daisy |
| | *Cirsium arvense* | Canada thistle |
| | *Cirsium vulgare* | bull thistle |
| | *Claytonia sibirica* | Siberian springbeauty |
| | *Clintonia uniflora* | queencup bead lily |
| | *Collomia grandiflora* | collomia |
| | *Coptis occidentalis* | gold-thread |
| | *Corallorhiza striata* | coralroot |
| | *Conyza canadensis* | horseweed |
| | *Cornus canadensis* | bunchberry |
| | *Dactylis glomerata* | orchardgrass |
| | *Danthonia spicata* | oatgrass |
| | *Deschampsia elongata* | slender hairgrass |
| | *Elymus glaucus* | wildrye |
| | *Epilobium angustifolium* | fireweed |
| | *Epilobium ciliatum* | willow herb |
| | *Epilobium minutum/paniculatum* | willow herb |
| | *Equisetum arvense* | field horsetail |
| | *Equisetum hyemale* | rough scouring rush |
| | *Festuca arundinacea* | tall fescue |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Festuca idahoensis* | Idaho fescue |
| | *Festuca pratensis* | meadow fescue |
| | *Festuca rubra* | red fescue |
| | *Fragaria vesca* | wild strawberry |
| | *Fragaria virginiana* | wild strawberry |
| | *Galium aparine* | catchweed bedstraw |
| | *Geum macrophyllum* | large-leaved avens |
| | *Gnaphalium chilense* | cudweed |
| | *Gnaphalium microcephalum* | cudweed |
| | *Gnaphalium palustris* | cudweed |
| | *Goodyera oblongifolia* | rattlesnake plantain |
| | *Hieracium albertinum* | hawkweed |
| | *Holcus lanatus* | velvetgrass |
| | *Hypericum perforatum* | St. John's wort |
| | *Juncus acuminatus* | rush |
| | *Juncus bufonius* | toadrush |
| | *Juncus effusus* | soft rush |
| | *Juncus tenuis* | slender rush |
| | *Lilium columbianum* | tiger lily |
| | *Linaria dalmatica* | toadflax |
| | *Lysichitum americanum* | skunk cabbage |
| | *Madia glomerata* | mountain tarweed |
| | *Melilotus alba* | white sweet clover |
| | *Mentha arvensis* | field mint |
| | *Oenothera biennis* | evening primrose |
| | *Phalaris arundinacea* | reed canarygrass |
| | *Phleum pratense* | common timothy |
| | *Plantago lanceolata* | common plantain |
| | *Plantago major* | English plantain |
| | *Poa annua* | annual bluegrass |
| | *Poa compressa* | Canada bluegrass |
| | *Poa pratensis* | Kentucky bluegrass |
| | *Poa trivialis* | roughstem bluegrass |
| | *Potentilla gracilis* | cinquefoil |
| | *Prunella vulgaris* | self heal |
| | *Pteridium aquilinum* | bracken fern |
| | *Pterospora andromedea* | pinedrops |
| | *Pyrola asarifolia* | common pink wintergreen |
| | *Pyrola picta* | wintergreen |
| | *Ranunculus repens* | creeping buttercup |
| | *Rumex acetosella* | sheep sorrel |
| | *Rumex crispus* | curly dock |
| | *Smilacina stellata* | star Solomon's seal |
| | *Solanum dulcamara* | nightshade |

## Appendix C
## Plant Species Observed Occurring within the Project Area

| Stratum | Scientific Name | Common Name |
|---|---|---|
| Herbs | *Solidago elongata/gigantea* | goldenrod |
| | *Stipa occidentalis* (?) | needlegrass |
| | *Tanacetum vulgare* | tansy |
| | *Taraxacum officinale* | common dandelion |
| | *Tiarella trifoliata* | coolwort foamflower |
| | *Triflium agrarium* | clover |
| | *Trifolium dubium* | suckling clover |
| | *Trifolium pratense* | red clover |
| | *Trifolium repens* | white clover |
| | *Trillium ovatum* | trillium |
| | *Typha latifolia* | cattail |
| | *Urtica dioica* | stinging nettle |
| | *Verbascum thapsus* | common mullein |
| | *Veronica americana* | American brooklime |
| | *Veronica officinalis* | common speedwell |
| | *Vicia americana* var *truncata* | American vetch |
| | *Vicia hirsuta* | hairy vetch |
| | *Viola orbiculata* | round-leaved violet |
| | *Xerophyllum tenax* | beargrass |
| Ferns | *Athyrium felix-femina* | ladyfern |
| | *Polystichum munitum* | sword fern |
| Mosses | *Polytrichum* spp | |
| | *Plagiothecum undulatum* | |
| | *Pleurozobium schreberi* | |
| | *Rhytidiopsisrobusta* | |
| Lichens | *Alectoria sarmentosa* | |
| | *Cladonia chlorophaea* | |
| | *Cladonia cornuta* | |
| | *Cladonia fimbriata* | |
| | *Cladonia pyxidata* | |
| | *Lobaria hallii* | |
| | *Peltigera aphthosa/britannica* | |
| | *Peltigera neopolydactyla* | |
| | *Peltigera praetextata* | |
| | *Peltigera venosa* | |

# APPENDIX D

## Photographs (4/02)

Photo 1: View into lagoon site area. Vegetation is cut timber with shrubs

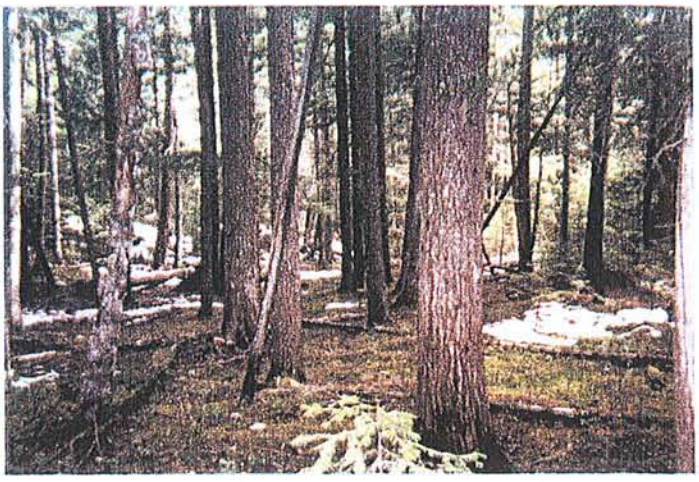


Photo 2: View into "old growth" area south of Reeder Bay Rd at sewage lagoon site. No impacts are proposed for this area. Vegetation is uncut mature timber with very little shrubs.

Photo 3: View south into Granite Creek. Sewer line to be hung from Reeder Bay Road bridge.

Photo 4: View into wetland west of Elkins Rd near Elkins resort. Vegetation is alder, willow, and open water patches.

Photo 5: As in Photo 4. Different view. No impacts are proposed in this wetland.

WELCH COMER
& ASSOCIATES, INC.
ENGINEERS SURVEYORS

# APPENDIX 13.8
# Newsletters, Newspaper Articles

14070

# GRANITE/REEDER WATER & SEWER DISTRICT

P.O. Box 189 • Nordman, Idaho 83848 • 443-2550 Tel

Newsletter 01-2 September 2001

## INTRODUCTION

This newsletter is part of a continuing series of written communications, which the Granite/Reeder Water & Sewer District has scheduled to provide to property owners within the District. This newsletter provides updated information concerning the status of the engineering study to evaluate the feasibility and cost of constructing wastewater collection and treatment facilities for the Granite/Reeder community.

## STATUS OF STAG GRANT

The Granite/Reeder Water & Sewer District has submitted all of the documentation necessary to acquire the $2.3 million STAG Grant through the U.S. Environmental Protection Agency. The grant application is presently being processed by the EPA office in Boise. The District anticipates receiving the official grant award notification from EPA this fall.

The District anticipates receiving the official grant award notification from EPA this fall.

As noted in our July 2001 newsletter, this EPA grant requires a minimum 45% match in funding from the local community. Any matching funds must first be approved by property owners through an LID process. The LID issue will not be ready to discuss until summer 2002, after completion of the District's engineering feasibility study.

## EVALUATION OF POSSIBLE TREATMENT SITES

The District's consulting engineers, Welch Comer Engineers of Coeur d'Alene, have been analyzing possible treatment sites, which is one of the key elements of the sewer system feasibility study. Presently, the engineers are looking closely at two alternate sites owned by the U.S. Forest Service. An Environmental Assessment is being performed by the engineers, a biologist, and an archaeologist to determine if these sites are viable from an environmental perspective.

If one of the possible Forest Service sites is selected as the preferred treatment site, then an extensive land exchange process would be required, since USFS land cannot be sold, only exchanged.

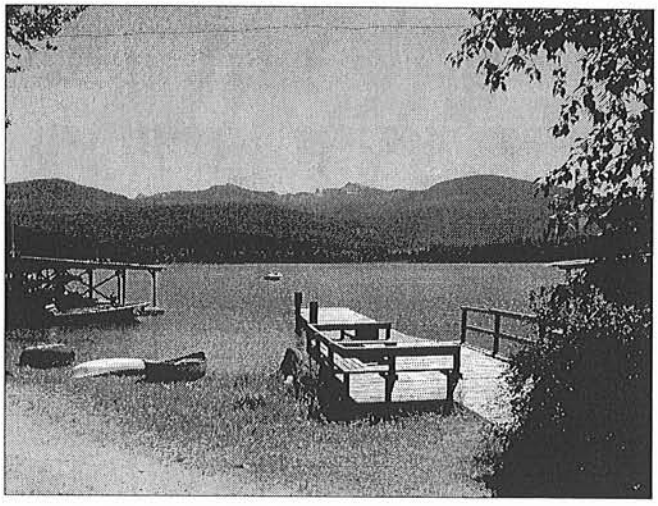
## OTHER SEWER SYSTEM OPTIONS

In addition to evaluating possible treatment sites and environmental issues, the District's engineers are also updating cost estimates for sewer collection system options. Another wastewater treatment option which the District is evaluating, is the possibility of contracting with the Outlet Bay Sewer District for treatment services. Representatives of the Granite/Reeder Board are having preliminary discussions with the Outlet Bay Sewer District about this treatment service option.

## Public Input is Required

The grants from IDEQ and EPA require that the District Board solicit public input regarding the recommended project options and environmental impacts of any proposed wastewater collection and treatment facility. The District Board anticipates holding several public meetings at Priest Lake during the winter and spring of 2002 regarding the findings and recommendations of its Facilities Plan Update Study.

Although receipt of the $2.3 million STAG Grant will greatly improve the financial feasibility of a wastewater system in Granite/Reeder, property owners within the District must participate in the decision of whether to proceed with any design and construction project for wastewater facilities. This will likely take the form of an LID hearing process late in the summer of 2002, after the Facility Plan recommendations have been updated.



The District's wastewater facilities plan study will be completed by spring 2002.

## Summary

The District Board is committed to making a serious effort to evaluate the feasibility and acceptability of central wastewater collection and treatment facilities for the Granite/Reeder District. The District Board commits to keeping property owners informed through newsletters like this, as well as public meetings, throughout the planning process. Thank you for your continued support and interest in the work of the Granite/Reeder Water and Sewer District Board of Directors.

## Sincerely,

## Granite/Reeder Water & Sewer Board of Directors

*Vince Aguirre, Chairman*

*Rich Benscotter*

*Camilla Cary*

*Gary Hagman*

*Don Pratt*

WELCH COMER
& ASSOCIATES, INC.
ENGINEERS SURVEYORS

# APPENDIX 13.9
# Consultation and Coordination with Other State and Federal Agencies

IDAHO STATE HISTORICAL SOCIETY

**Our mission: to educate through the identification, preservation, and interpretation of Idaho's cultural heritage.**

**Dirk Kempthorne**
Governor of Idaho

**Steve Guerber**
Executive Director

**Administration**
1109 Main Street, Suite 250
Boise, Idaho 83702-5642
Office: (208) 334-2682
Fax: (208) 334-2774

**Archaeological Survey**
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3847
Fax: (208) 334-2775

**Capitol Education Center**
Statehouse/P.O. Box 83720
Boise, Idaho 83720-0001
Office: (208) 334-5174

**Historical Museum and Education Programs**
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

**Historic Preservation Office**
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

**Historic Sites Office**
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

**Library/Historical and Genealogical Collection**
450 North Fourth Street
Boise, Idaho 83702-6027
Office: (208) 334-3356
Fax: (208) 334-3198

**Oral History**
450 North Fourth Street
Boise, Idaho 83702-6027
Office: (208) 334-3863
Fax: (208) 334-3198

**Memberships and Outreach and Development**
1109 Main Street, Suite 250
Boise, Idaho 83702-5642
Office: (208) 334-3986
Fax: (208) 334-2774

**Publications**
450 North Fourth Street
Boise, Idaho 83702-6027
Office: (208) 334-3428
Fax: (208) 334-3198

**State Archives/Manuscripts**
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626



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MAY 16 2002

May 10, 2002

Welch Comer & Associates
1626 Lincoln Way
Coeur d'Alene, Idaho 83814

RE: Granite-Reeder Water and Sewer District Wastewater Management System Improvements, Priest Lake, Idaho

Thank you for sending the report documenting archaeological survey of the Granite-Reeder Water and Sewer District wastewater management system on Priest Lake, Idaho. The investigations and report, completed by Northwest Archaeological Associates, meet the Secretary of the Interior's Standards. We appreciate the fact that shovel testing was conducted as part of the identification step. This allows our office to make better informed recommendations and comments.

Three cultural properties were identified within the project area. We agree that (1) site 10BR591 is *not eligible* for the National Register of Historic Places; (2) site GR01-01, a historic road, is *not eligible* for the National Register due to lack of integrity; and (3) Elkins Resort (17-12900 to 17-12932) is *eligible* for the National Register.

We also agree that the project will have *no effect* on Elkins Resort. We should be notified immediately, however, if archaeological remains are discovered during construction.

If you have any questions, feel free to contact me at 208-334-3847.

Sincerely,

Susan Pengilly Neitzel

Susan Pengilly Neitzel
Deputy SHPO and
Compliance Coordinator