**LAKE PEND OREILLE**
**EURASIAN MILFOIL (*Myriophyllum spicatum* )**
**TREATMENT WITH BENTHIC SCREENS**

**Biological Evaluation**

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## 1.0 INTRODUCTION & HISTORY

Eurasian watermilfoil (*Myriophyllum spicatum*), an invasive noxious weed has begun to spread and take hold in various locations in Lake Pend Oreille and along the Pend Oreille River. This Biological Evaluation (BE) focuses on the control or eradication of this introduced aquatic plant using one and potentially two control treatments. Reduction and management of Eurasian watermilfoil populations in the Pend Oreille River Basin has been identified as one of the major goals in the Clark Fork-Pend Oreille Watershed Management Plan over the next decade.

Eurasian watermilfoil was introduced into North America over 100 years ago, and is now found over much of the United States. By the mid-1970s it became established in central British Columbia and traveled downstream to Lake Osoyoos and the Okanogan River in central Washington (www.ecy.wa.gov/programs/wq/plants/weeds/milfoil.html). Now, watermilfoil is found in the Columbia, Okanogan, Snake and Pend Oreille Rivers and in many nearby lakes. Its method of spread is largely by attachment to boat trailers. Presently, an estimated 1,800 acres in the Pend Oreille River is infested with Eurasian watermilfoil.

The introduction of Eurasian watermilfoil can drastically alter a waterbody's ecology. It reproduces extremely rapidly and forms very dense mats of vegetation on water surfaces. There are many reasons why milfoil is not desirable. It competes aggressively to displace and reduce the diversity of native aquatic plants. It elongates from shoots initiated in the fall, beginning spring growth earlier than other aquatic plants. Tolerant of low water temperatures, it quickly grows to the surface, forming dense canopies that overtop and shade surrounding vegetation (Madsen 1994). Canopy formation and light reduction are significant factors in the decline of native plant abundances and diversity observed when watermilfoil invades healthy plant communities (Smith and Barko, 1990; Madsen, 1994). Monospecific stands of watermilfoil provide poor habitat for waterfowl, fish, and other wildlife (http://www.ecy.wa.gov/programs/wq/plants/weeds/aqua004.html). This invasive species has much less value as a food source for waterfowl than the native plants it replaces and, although fish may initially experience a favorable edge effect, the characteristics of this plant's overabundant growth negate any short-term benefits it may provides fish in healthy waters. At high densities, its foliage supports a lower abundance and diversity of invertebrates, organisms that serve as an important food resource. The growth and senescence of thick vegetation slows water flow, increases water temperature, degrades water quality and depletes dissolved oxygen levels. This substantively affects the spawning potential of resident fish as well as other organisms. In addition, the sheer mass of plants can cause flooding and the stagnant mats can create good habitat for mosquitoes.

Similar detrimental effects include accelerating the eutrification process due to the significant rates of plant sloughing and leaf turnover as well as decomposition of high biomass at the end of the growing season. This increases the internal loading of phosphorus and nitrogen to the water column. Eurasian watermilfoil impacts power generation and irrigation by clogging dam trash racks and intake pipes. It also interferes

with recreational activities such as swimming, boating, fishing and waterskiing. In Washington, private and government sources spend about $1,000,000 per year on Eurasian watermilfoil control (www.ecy.wa.gov/programs/wq/plants/weeds/milfoil.html).

## 2.0 DESCRIPTION OF ACTION AREA AND PROJECT

The Pend Oreille River at Albeni Falls Dam has a watershed of about 24,200 square miles, which supplies an average stream flow of about 25, 930 cubic feet per second. The Clark Fork River is the lake's largest tributary and contributes about 86 percent of the total flow. Pend Oreille Lake is one of the deepest and largest lakes in the western United States. Conditions in Pend Oreille Lake, such as the stage of the lake and timing of the inflow, are influenced not only by the project operation but also by the operation of upstream projects and basin hydrologic factors.

Pend Oreille Lake lies in the Purcell Trench, a deep, glacially carved, U-shaped valley separating the Cabinet, Selkirk, and Coeur d'Alene Mountain Ranges. Sheer rock slopes that continue steeply below the water surface towards the bottom bound much of the lakes shoreline. The remainder of the perimeter is a combination of shifting river deltas, flood plain margin, and relict glacial terraces.

The proposed action is part of the adaptively managed 5-year plan developed by Bonner County and the Bonner County work group to control watermilfoil. The action is to utilize and evaluate the use of geotextile benthic screens, also known as bottom barriers, at selected sites along Lake Pend Oreille above Albeni Falls Dam, Idaho. Results from this evaluation may provide guidance to resource managers for use in impoundment environments in Lake Pend Oreille and similar sites in the Pacific Norwest Region.

### Objectives

The objective of this proposed action is to utilize and determine the effectiveness of benthic screens in controlling/eradicating Eurasian watermilfoil (*Myriophyllum spicatum*) at selected evaluation sites in the Pend Oreille River and at the mouth of the Pend Oreille River and Priest River.

### Treatment Sites

The overall project area on the Pend Oreille River upstream of Albeni Falls Dam is shown in Figure 1. Geotextile benthic screens will be placed on the lake bottom in shallow water at four (4) swim area sites and near four (4) boat ramps in close proximity to Corps-managed, recreational areas infested with Eurasian watermilfoil (Figures 2-5).

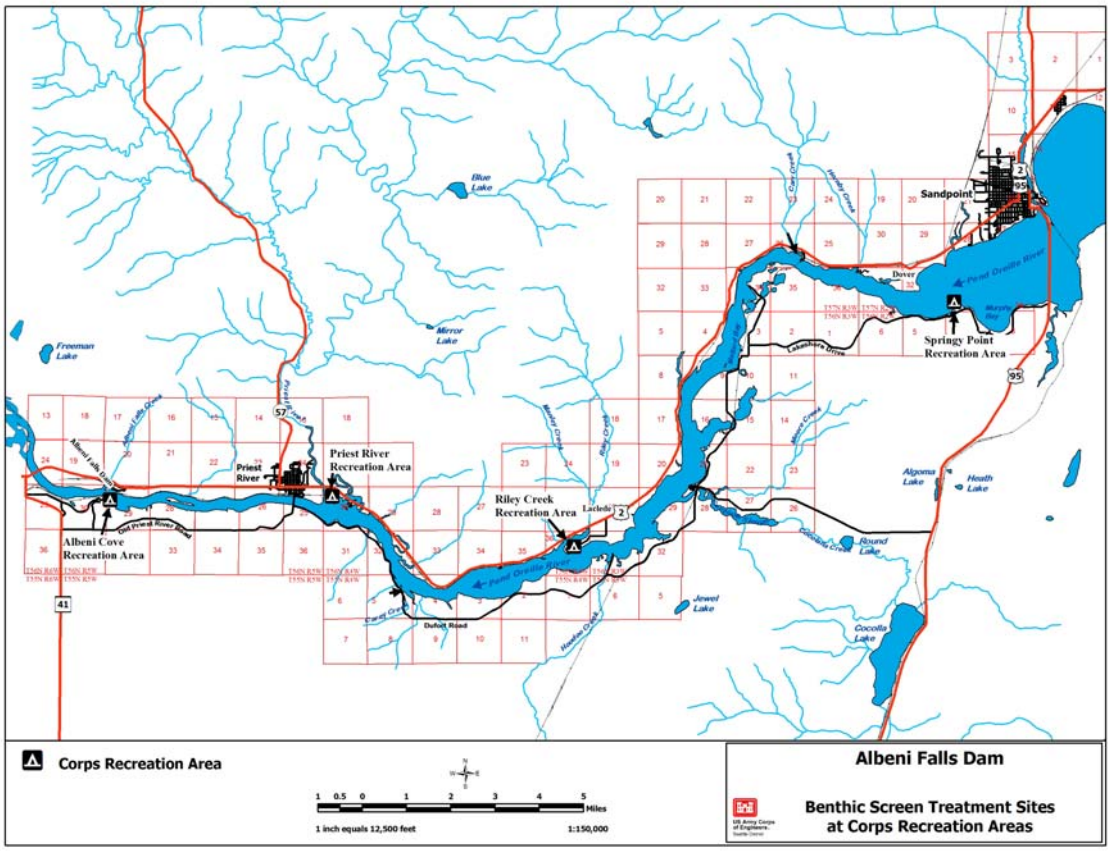


Figure 1. Overall project area and general treatment areas in Lake Pend Oreille.

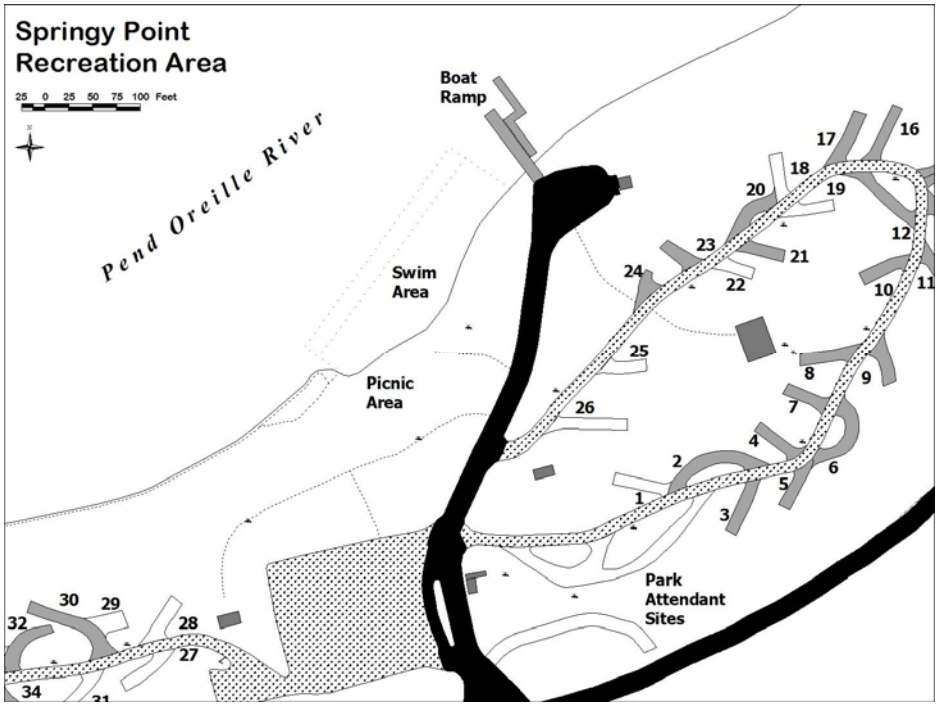


Figure 2. Springy Point Recreation Area.

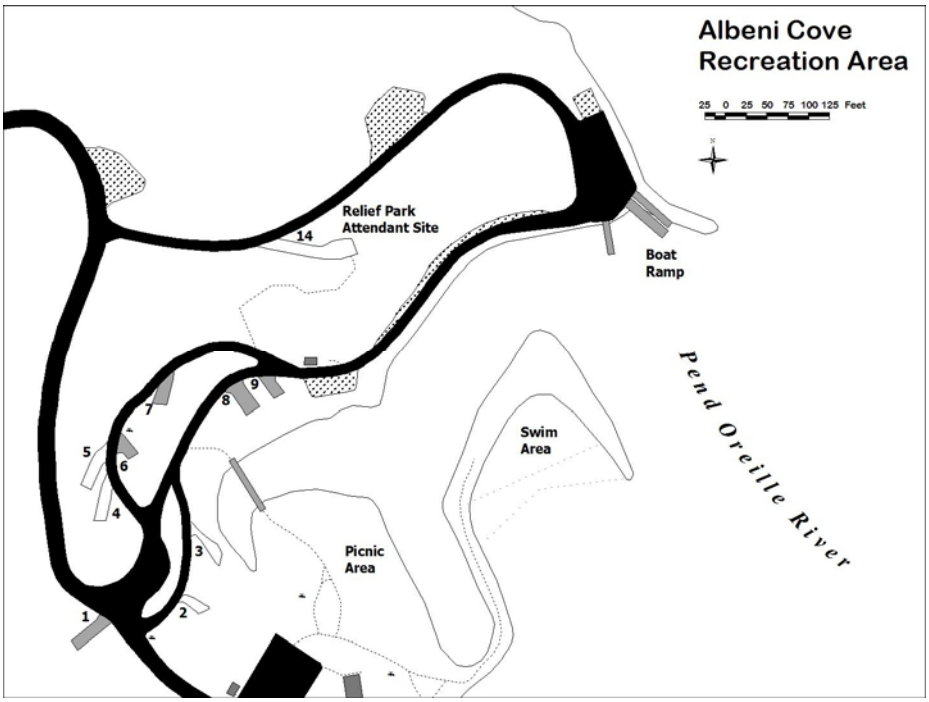


Figure 3. Albeni Cove Recreation Area 2.

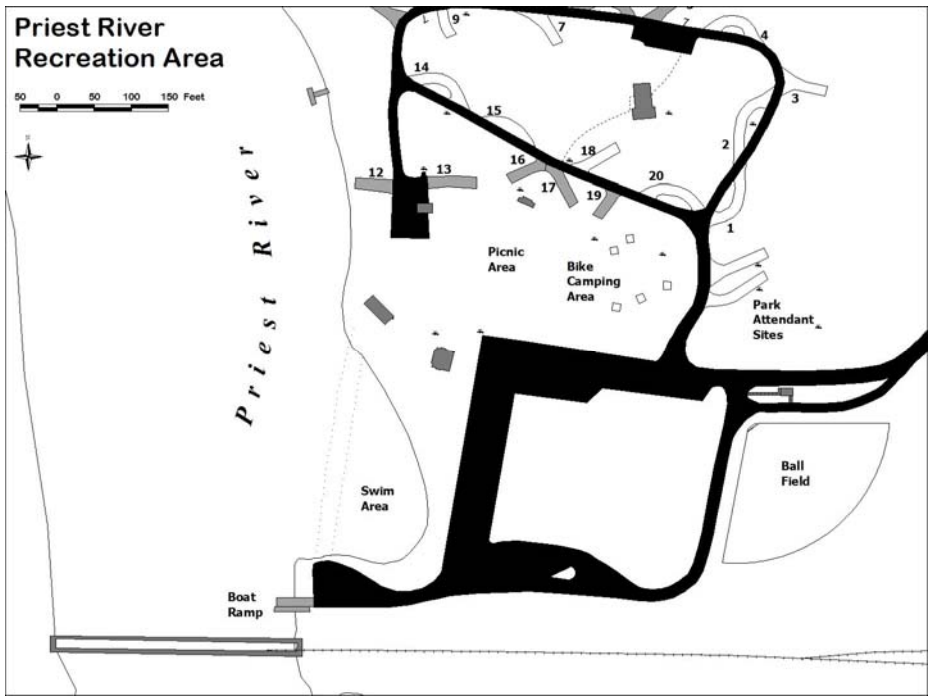


Figure 4. Priest River Recreation Area 3.

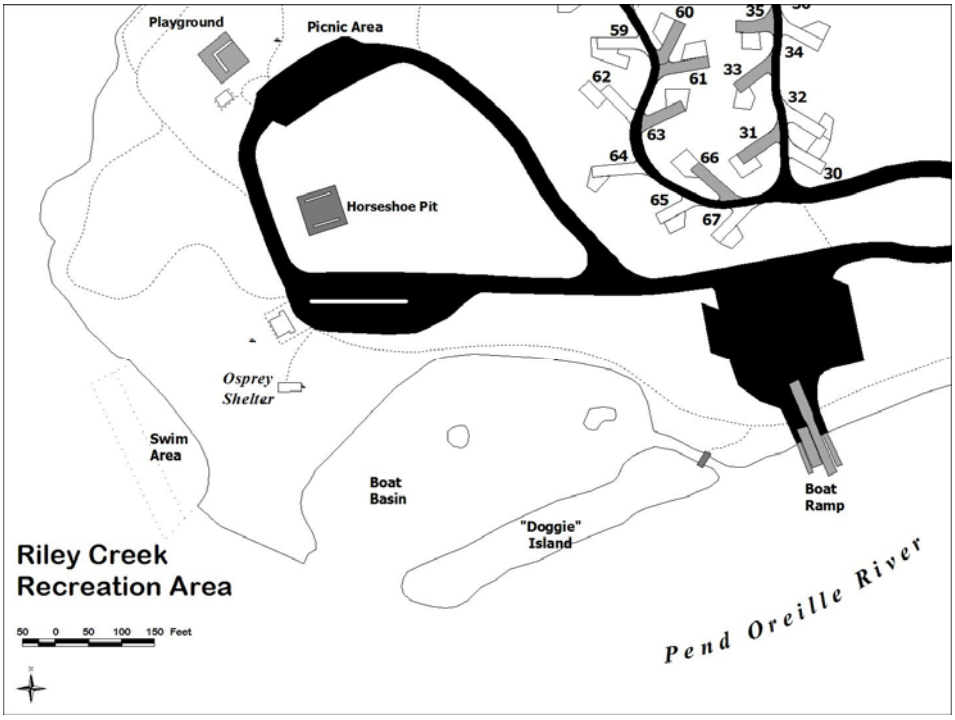


Figure 5. Riley Creek Recreation Area 4.

## 3.0 METHOD OF PLACEMENT AND MAINTENANCE OF SCREENS

The benthic screen (bottom barrier) covers the sediment like a blanket, compressing aquatic plants while reducing or blocking light penetration. Common screen materials are geotextile ground cover cloth or erosion control materials. A number of commercial bottom barriers have been marketed over the years. Various geotextile materials such as perforated black Mylar and woven synthetics are commonly used as benthic screens. (Washington Department of Ecology: http://www.ecy.wa.gov/programs/wq/plants/management). Screen installation is easier in winter or early spring when plants have died back. An ideal benthic screen should be durable, heavier than water, reduce or block light, prevent plants from growing into and under the fabric, be easy to install and maintain, and should readily allow gases produced by rotting weeds to escape without "ballooning" the fabric upwards (Ecology, op. cit).

The duration of watermilfoil control depends on the rate that weeds can grow through or on top of the benthic screen, the rates of sediment deposition on the screen, and the durability of the screen.

The following method of placement is part of the adaptively managed 5-year plan developed by Bonner County and the Bonner County work group. Construction, placement, and potential movement of benthic screens will be supervised by local noxious weed experts. In this action, divers will place the screens onto the densest populations of watermilfoil at each of the eight (8) selected sites at depths ranging from 3 to 15 feet below OHW. Each screen will be constructed from a PVC pipe frame filled with sand to aid with sinking and remaining in places. From this frame, a gas permeable fabric will be attached and suspended from the frame, then placed down on the vegetation and attached to the bottom by pins or sandbags. Total watermilfoil area to be covered by all screens will not exceed four (4) acres.

Each set of benthic screens will be identified with an Idaho Department of Lands approved marker and map showing the proposed locations each season. Screens would normally be installed during the spring months, most likely during the month of June. Installation is easier in winter or early spring when plants have died back, but weather and river conditions would normally preclude placement during the winter season. In summer, cutting or hand-pulling the plants by diver would need to be accomplished to facilitate bottom barrier installation. This is because research has shown that much more gas is produced under benthic screens that are installed over the top of aquatic plants. The less plant material that is present before screen installation, the more successful the screen will be in staying in place.

Benthic screens can be removed from any initial treatment location and relocated to an adjacent area by divers after effective treatment is concluded. The screens need to remain in place for a minimum of six (6) weeks and as long as ten weeks to accomplish

successful removal of watermilfoil. According to Encroachment Permit No. L-ID-EWM-01 from the State of Idaho, the screens must be removed at the end of each season, no later than October 31st of each calendar year.

Regular maintenance is essential and can extend the life of the benthic screens (Ecology, op cit). As part of the ongoing maintenance program, screens will be checked periodically throughout the treatment period. Maintenance will include regular diver inspection of the screens to observe their durability and their effectiveness in controlling plant growth (including observations as to whether any plants are growing up through the barrier). Divers will remove, to the extent practical, sediment that accumulates on the screen to discourage watermilfoil lateral surface shoots from forming a canopy over the screen and eventually colonizing its surface. Divers will check the screens periodically to ensure that the screens remain on the bottom and watermilfoil plants remain covered, and that no new fragments have taken root nearby. Screens will be removed by diver no later than October 31st of each calendar year. Determination of timing of removal or replacement of screens will be judged by local aquatic weed control professionals in coordination with the Corps of Engineers.

Advantages and disadvantages of benthic screens (www.secy.wa.gov/programs/wq/plants/management.html).

Advantages:

a. Installation of benthic screens creates an immediate open water area.
b. Benthic screens are easily installed around docks and in swimming areas.
c. Properly installed benthic screens can control up to 100 percent of aquatic plants.
d. Benthic screen materials are readily available and can be easily installed.

Disadvantages:

a. For safety and performance reasons, benthic screens must be regularly inspected and maintained.
b. Benthic screens may be damaged or dislodged by fishing gear, propeller backwash or boat anchors.
c. Improperly anchored benthic screens may create safety hazards for boaters and swimmers
d. Without regular maintenance, aquatic plants, including watermilfoil, will quickly begin to colonize the benthic screen.
e. Benthic screens must be removed by October 31st of any calendar year.

Agency coordination

According to the above referenced encroachment permit from the State of Idaho, the Corps will coordinate with the Idaho Department of Fish and Game (IDFG) through the following actions:

a. provide an annual listing to IDFG of the proposed screen placement sites by water body and general location with the intended duration of screen placement.

b. coordination with the IDFG at the regional level during treatment site planning, screen placement, screen movement, screen removal, inspections, and monitoring.

This BE will be transmitted to the Fish and Wildlife Service for their concurrence. The project plan will be reviewed by all appropriate agencies involved with management of Eurasian watermilfoil in Lake Pend Oreille, including the U. S. Fish and Wildlife Service, Idaho Department of Lands, Idaho Department of Fish and Game and the Bonner County Weed Department. The Idaho Department of Environmental Quality will also be coordinated with as circumstances dictate.

Results from our project will provide valuable information and guidance on how to effectively use benthic screens in Lake Pend Oreille above Albeni Falls Dam and similar water bodies in the Pacific Northwest for the control and eradication of Eurasian watermilfoil.

## 4.0 SPECIES

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended, the Corps is required to assure that its actions have taken into consideration impacts to federally listed or proposed threatened or endangered species for all federally funded, permitted, or licensed projects. Five species listed as either threatened or endangered and two species of concern are potentially found in the project area:

- Gray Wolf *(Canis lupus)*
- Bald Eagle *(Haliaeetus leucocephalus)*
- Ute ladies'-tresses *(Spiranthes diluvialis)*
- Bull trout *(Salvelinus confluentus)*
- Lynx (*Lynx canadensis*)

## 5.0 DETERMINATION SUMMARY

Below is a table summarizing the status and effect determinations made for each of the species potentially occurring in the project vicinity. Also included are the page numbers where detailed descriptions of the forecasted effects of the proposed action on these species can be found.

Table 1. Determination Summary Table

| **Species** | **Listing Status** | **Effect Determination** |
|---|---|---|
| Bald Eagle | Listed Threatened | Not likely to adversely affect |
| Bull Trout | Listed Threatened | Not likely to adversely affect |

| | | |
|---|---|---|
| Gray Wolf | Listed Threatened | No effect |
| Ute ladies'-tresses | Listed Threatened | No effect |
| Lynx | Listed Threatened | No effect |

5.1 GRAY WOLF (*Canis lupus*)

Gray wolves occurring in Idaho north of Interstate 90 are listed as endangered, and receive full protection in accordance with provisions of the Endangered Species Act. Gray wolves occurring in Idaho south of Interstate 90 are listed as nonessential experimental population, with special regulations published in the Federal Register, Vol. 59, No. 224- November 22, 1994. This area is located above Interstate 90 and is therefore protected under the ESA.

The gray wolf is the largest member of the dog family (*Canidae).* Adult males average 31.8-45.4 kg (70-100 lbs.) and females weigh in at around 24.9-38.6 kg (55-85 lbs.). Gray wolves measure 1.5-1.8 m (5-6 ft.) from nose to tail, and stand 66-81 cm (26-32 in.) at the shoulder. The pelt may be any color from black to white, or a mix. They have long legs and the chest is deep and narrow. These aspects of the wolf's anatomy 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 (6mi.) away. There are as many as 24 sub-species in North America.

The gray wolf reaches sexual maturity in approximately 2 years. About six pups are born in April in a den dug by the female. The pack (2-8 wolves) shares in the responsibility of raising the pups. Gray wolves are carnivorous, feeding on most game animals from large ungulates such as elk to small rodents like deer mice. Their diet is very seasonal and is based on food availability. Gray wolves will travel as far as 30 miles per day in search of food.

***Known Occurrences in the Project vicinity***

Although the habitat north of the project and U.S. Highway 2 that borders the project is ideal gray wolf habitat, it is believed that no packs live within the immediate project area (Cordova, personal communication).

***Effects of the Action***

If wolves or a single wolf were to enter the proposed project area there would be potential for disruption of their feeding behavior, because the placement and removal of screens could potentially frighten avian and other prey away from the immediate vicinity. However, there would be no long-term effects due to this feeding behavior interference.

***Determination of Effect***

The Corps believes this project will have **no effect on Gray Wolves**. This determination is based on the fact there are no known packs that live within the immediate vicinity of the proposed projects.

## 5.2 BALD EAGLE (*Haliaeetus leucocephalus*)

Male bald eagles generally measure 3 feet from head to tail, weigh 7 to 10 pounds, and have a wingspan of approximately 6 ½ feet. Females are larger, some reaching 14 pounds and having a wingspan of up to 8 feet. Bald eagles have large pale eyes; yellow beak; and black talons. The distinctive white head and tail feathers appear after the bird is 4 to 5 years old. As juvenile eagles they are completely dark brown. Their life span is believed to be 30 years or longer in the wild, and even longer in captivity. Nests are built usually in large trees near rivers; lakes, marshes or other associated wetland areas and are usually re-used year after year. These nests are very large, measuring up to six feet across and weighing hundreds of pounds. Bald eagles normally lay two to three eggs once a year and the eggs hatch after about 35 days. The characteristic features of bald eagle breeding habitat are nest sites, perch trees, and available prey. Bald eagles primarily nest in uneven-aged, multi-storied stands with old-growth components. Factors such as tree height, diameter, tree species, position on the surrounding topography, distance from water, and distance from disturbance also influence nest selection. Snags, trees with exposed lateral branches, or trees with dead tops are often present in nesting territories and are critical to eagle perching, movement to and from the nest, and as points of defense of their territory.

Fish are the primary food source, but bald eagles will also take a variety of birds, mammals, and turtles (both live and as carrion) when fish are not readily available. Food is recognized as the essential habitat requirement affecting winter numbers and distribution of bald eagles. Other wintering habitat considerations are communal night roosts and perches. Generally the largest, tallest, and more decadent stands of trees on slopes with northerly exposures are used for roosting; eagles tend to roost in older trees with broken crowns and open branching. Bald eagles select perches on the basis of exposure, and proximity to food sources. Trees are preferred over other types of perches, which may include pilings, fence posts, power line poles, the ground, rock outcrops, and logs (Steenhof 1978).

In 1978, the bald eagle was listed as endangered under ESA in 43 of the lower 48 states and was listed as threatened in Michigan, Minnesota, Wisconsin, Oregon, and Washington. In 1994, the bald eagle was reclassified as threatened in the 43 states where it had been endangered and remained as threatened in the other 5 states. On July 6, 1999, a proposed rule was published to delist the bald eagle throughout the lower 48 states. On December 12, 2006, a proposed rule was published to reopen the comment period and on February 16, 2007, another proposed rule was published providing new information and again reopening the comment period. Originally the U.S. Fish and

Wildlife Service (FWS) was under a court-ordered deadline to make a final determination on delisting by the February 2007 date. They have now reached a court-approved agreement allowing them to delay a final determination on the eagle's status until June 29, 2007.

***Known Occurrences in the Project Vicinity***

Bald eagle sightings during the winter months are more frequent than during other times of the year, as the general area around the lake provides important bald eagle winter-feeding habitat. The area where treatment is to take place is approximately 2.0 miles from the nearest eagle nest. Eagles are seen soaring over the area and at times there are reports of eagles sitting on the ground eating some type of carrion. There are perch trees or assumed perch trees as eagles have been seen utilizing the emergent trees at non-specific times during the winter months in the general location of the treatment area.

***Effects of the Action***

Foraging bald eagles may be disturbed by temporary barrier placement activities (noise due to the presence of boat and outboard motor, workers and divers) but any reduction in the availability of prey due to this treatment will be discountable. Eagles are somewhat accustomed to high levels of human activity in and near the treatment sites. Eagles tend to tolerate more disturbances at feeding sites than in roosting areas (Steenhof 1978).

***Determination of Effect***

The Corps believes this project **is not likely to adversely affect** the bald eagle. This determination is based on the lack of nests and communal night roosts in the immediate vicinity of the proposed treatment areas. This treatment would have no effect on bald eagle nesting or roosting habitat. While screen placement activities have the potential to disrupt feeding opportunities in a localized area, this project would not measurably alter the availability of bald eagle prey.

5.3 BULL TROUT (*Salvelinus confluentus*)

Girard first described Bull trout as *Salmo spectabilis* in 1856 from a specimen collected on the lower Columbia River, and subsequently described under a number of names such as Salmo confluentus and Salvelinus malma (Cavender 1978). Bull trout and Dolly Varden (Salvelinus malma) were previously considered a single species (Cavender 1978; Bond 1992). The American Fisheries Society formally recognized Bull trout and Dolly Varden as separate species in 1980 (Robins et al. 1980).

Bull trout exhibit resident and migratory life-history strategies through much of the current range (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear. Migratory bull trout spawn in tributary streams where juvenile fish rear from one to four years before migrating to either a lake (adfluvial), river (fluvial), or in certain coastal areas, to

saltwater (anadromous), where maturity is reached in one of the three habitats (Fraley and Shepard 1989; Goetz 1994).

Water temperature above 15 deg. C (59 deg. F) is believed to limit bull trout distribution, which may partially explain the patchy distribution within a watershed (Fraley and Shepard 1989; Rieman and McIntyre 1995). Preferred spawning habitat consists of low gradient streams with loose, clean gravel (Fraley and Shepard 1989) and low water temperatures of 5 to 9 deg. C (41 to 48 deg. F) in late summer to early fall (Goetz 1994).

***Known Occurrences in the Project Vicinity***

It is probable that bull trout could be present in the treatment areas during treatment. However water depths in the vicinity of the treatment areas are shallow and, during the placement period in the spring and summer months, would have higher water temperatures than bull trout prefer. Only the treatment site located at the confluence with the Priest River would exhibit the lower water temperatures preferred by bull trout. Therefore it is likely that reduced populations of bull trout would be present during the screen placement period from May to October.

***Effects of the Action***

It is possible that juvenile bull trout may forage in dense watermilfoil areas such as those selected for benthic screen placement. However, the diver activity and reduced light from the surface is expected to result in juvenile escapement from the treatment area. It is possible, but not likely, that small numbers of fish could be trapped under the screen as it descends to the bottom via diver guidance. Each screen then will result in the loss of a very small (~100 $ft^2$) potential forage and predator avoidance area for juvenile bull trout. Adult bull trout should not be affected as they normally do not forage in dense watermilfoil areas, being primarily "edge feeders" in these areas (Goetz, 2007). Potential effects of benthic screen placement on bull trout will be mitigated by timing of the placement activities. Placement will be targeted for late spring or early summer, before summer pool levels are attained, as described above. Overall lake productivity would only be decreased over a miniscule acreage amount. On the positive side, the control of this plant in swim and boat ramp areas is a very positive effect, and it is possible that along with other treatments of this plant, benthic screen placement will permanently extinguish watermilfoil in these areas, eventually resulting in the establishment of healthy native aquatic plants communities.

***Determination of Effect***

The Corps has determined that the proposed project is **not likely to adversely affect** bull trout. This determination is based upon the minimization of direct impacts that will result from scheduling work during the low water levels and during the late spring/early summer period, as well as the fact that it is very unlikely that these fish would be found foraging in dense plant areas. There would be no effects to spawning habitat or behaviors. Potential effects of any disruptions to feeding would be discountable.

## 5.4 UTE LADIES'-TRESSES *(Spiranthes diluvialis)*

This species is a perennial, terrestrial orchid with stems 20 to 50 centimeters (cm) (8 to 20 in) tall, arising from tuberously thickened roots. Its narrow leaves are about 28 cm (11in) long at the base of the stem, and become reduced in size going up the stem. The flowers consist of 7 to 32 small (7.5 to 15mm) (3/8 to 5/8 in) white or ivory flowers clustered into a spike arrangement at the top of the stem. The species is characterized by whitish, stout, ringent (gaping at the mouth) flowers. The sepals and petals, except for the lip, are rather straight, although the lateral sepals are variably oriented, with these often spreading abruptly from the base of the flower. Sepals are sometime free to the base.

Ute ladies'-tresses generally blooms from late July through September, depending on location and climatic conditions. In some areas, this species may bloom in early July or as late as early October. Bumblebees are apparently required for pollination of this species. Ute ladies'-stresses is usually found in mesic or wet meadows along permanent streams.

### *Known Occurrences in Project Vicinity*

Ute ladies'-tresses are not found in the proposed benthic screen treatment locations.

### *Effects of Action*

There would be no effect of benthic screen placement in Lake Pend Oreille on Ute ladies'-tresses.

### *Determination of effect*

The Corps has determined that the proposed treatment will have **no effect** on Ute ladies'-tresses. This determination is based on the fact these plants are not located in submerged benthic screen treatment areas and there is no habitat suitable at the proposed treatment sites. And there are no ancillary treatment actions that would cause either direct or indirect effects on this plant.

## 5.5 LYNX (*Lynx Canadensis*)

Lynx are a medium-sized cat with long legs, large, well-furred paws, long tufts on the ears, and a short, black-tipped tail (McCord and Cardoza 1982). Adult males average 10 kilograms (kg) (22 pounds) in weight and 85 centimeters (33.5 inches) from head to tail, and females average 8.5 kilograms and 82 centimeters from head to tail (Quinn and

Parker 1987). The well-tufted paws and long legs give the lynx and advantage for hunting in deep snow.

In the contiguous United States, the lynx historically occurred in the Cascade Range of Washington and Oregon; the Rocky Mountains from Montana, Idaho, and Oregon south to Utah and Colorado; the western Great Lakes region; and the northeastern United States region from Maine, south to New York and Pennsylvania, and east to Massachusetts (McCord and Cardoza 1982; Quinn and Parker 1987).

In the United States lynx inhabit a mosaic between boreal forest and subalpine coniferous forest or northern hardwoods, almost always residing at about 4000 foot elevation (Barbour et al. 1980). They use late successional forest with large woody debris, such as downed logs and windfalls, to provide denning sites with security and thermal cover for kittens (McCord and Cardoza 1982, Koehler 1990, Koehler and Brittell 1990).

Lynx are specialized predators that are highly dependent on the snowshoe hare for food. Lynx usually concentrate their foraging activities in areas where hare activity is high (Koehler et al. 1979). Lynx also prey opportunistically on other small mammals and birds, particularly when hare populations decline (Nellis et al. 1972; Brand et al. 1976; McCord and Cardoza 1982).

According to the proposed rule to list the Canada Lynx and to Rust (1946), lynx were distributed throughout northern Idaho in the early 1940's, occurring in 8 of the 10 northern and north-central counties. In 1990, Hash reported stable or declining small lynx populations in Idaho. Harvest records were unreliable prior to the 1980's because no distinction was made between bobcats and lynx. In 1982, Idaho Department of Fish and Game initiated a mandatory pelt-tagging program and the number of reported lynx harvested dropped to none. No current population estimates are available.

Prior to 1977, lynx were considered a predator in Idaho, subject to unrestricted harvest with open season and no bag limit. In 1990, in response to concern over the status of the lynx in Idaho, the Idaho Department of Fish and Game instituted a statewide harvest quota of three lynx per year. Although still classified as a furbearer, lynx was dropped from the hunting and trapping seasons in 1997/1998. The U.S. Fish and Wildlife Service concluded that a self-sustaining resident population does not exist in Idaho, but individual animals are present. This could be from the movement of lynx across the Canadian border.

***Known Occurrences in Project Vicinity***

There are no known lynx populations associated with the proposed benthic screen treatment areas.

***Effects of Action***

With no known lynx associated with the proposed benthic screen treatment areas or the action area there is a no effect determination for the lynx.

***Determination of effect***

The Corps has determined that the placement of benthic screens will have **no effect** on the Lynx. This determination is based on the fact that no known lynx are associated with the proposed treatment sites or action area and the treatment habitat area is not conducive habitat for Lynx.

## 6.0 INTERRELATED AND INTERDEPENDENT ACTIONS

Interdependent actions are those, which have no independent utility apart from the action being considered. Interrelated actions are activities that are part of the larger action and depend on the larger action for their justification. If this treatment is successful, these four areas will have swim and boat ramp areas devoid of watermilfoil, which will have positive impacts on swimmers and boaters in these areas. If not, local officials will need to rely on other methods of control, e.g. herbicide treatments, diver dredging, and milfoil weevil biocontrol. No negative interrelated or interdependent effects would be known to be associated with this treatment, as only four (4) very small treatment sites are involved.

## 7.0 CUMULATIVE AND SECONDARY EFFECTS

Cumulative effects are defined in 50 CFR part 402.02 as "those effects of future State or private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future federal actions including additional activities permitted under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act will be reviewed under separate Section 7 consultation processes and are not considered cumulative effects. The Corps knows that Bonner County will treat milfoil within the action area outside of Corps property and will follow all guidelines established for treatment of milfoil by Idaho Department of Environmental Quality, Idaho Department of Lands, Idaho Fish and Game, and all other state and regulatory agencies. If benthic screens are successful, they will contribute to the cumulative control and eradication of watermilfoil from other treatments attempted in the Pend Oreille River. Secondary effects include safer swimming and boat launching in the treatment areas.

## 8.0 CONCLUSION

Eurasian watermilfoil is an invasive non-native submersed aquatic plant. It can grow to extreme densities and effectively eliminate recreation in waters up to 15 feet deep. It also has the potential to adversely impact fish and wildlife habitat, water quality, aesthetics, property values, irrigation, and other uses of water if not treated immediately. There is

potential for the areas infested with milfoil to have dangerously low levels of dissolved oxygen that could result in areas unsuitable for fisheries. Also, its growth in swim areas and boat launch areas makes it a nuisance and a potential safety problem in these areas. Therefore, it is highly recommended that benthic screen treatment occurs as soon as possible for the summer recreational season.

## 9.0 CONSERVATION MEASURES

Regular maintenance is essential and can extend the life of most bottom barriers. As part of the ongoing maintenance program, screens will be checked periodically throughout the treatment period to assure they remain in their designated treatment areas. Maintenance will also include inspection of the screens to see if any plants are growing up through the barrier, and also removal of sediment buildup on the screen. This will discourage watermilfoil lateral surface shoots from forming a canopy over the screen and eventually colonizing the barrier surface. Divers will also recheck the screens periodically to ensure that all milfoil plants remain covered and that no new fragments haves taken root nearby.

## 10.0 REFERENCES


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