FINAL ENVIRONMENTAL ASSESSMENT

SEAPLANE OPERATIONS POLICY

AT CHIEF JOSEPH, ALBENI FALLS, AND LIBBY DAMS

U.S. Army Corps of Engineers-Seattle District
August 2016

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EXECUTIVE SUMMARY

In 1977, Title 36 of the Code of Federal Regulations (CFR) part 328 provided uniform policies and criteria to permit, under certain conditions, the operation of seaplanes at civil works water resource projects. According to Title 36 CFR 327.3 and 327.4, seaplanes, while taxiing on the lake are considered vessels by the U.S. Coast Guard and must follow the same marine rules of the road as all vessels on the lake. Seaplanes are permitted to taxi to different areas of the lake including those areas restricted for landings and take-off. Based on this CFR, the U.S. Army Corps of Engineers promulgated Engineering Regulation (ER) 1130-2-411, dated 15 November 1977, which was superseded by ER 1130-2-550 on 15 November 1996. Under the CFR and ER 1130-2-411, each District had one year to develop policies as to which lakes would be open or have certain restrictions to seaplane operations. No records can be found which indicate whether Seattle District developed a district-wide policy regarding seaplane operations, and no official policy is on file. The Lake Washington Ship Canal (LWSC), Howard Hanson Dam (HHD), and Mud Mountain Dam (MMD) have local policies in place restricting or prohibiting the use of seaplanes. Chief Joseph Dam (CJD), Albeni Falls Dam (AFD), and Libby Dam (LD), the three operating projects with reservoirs sufficient to accommodate seaplane operations, sufficient shoreline for tail anchorage offshore, and public interests, have no formal policies in place. In the past various Operating Project Managers have made stated restrictions (Title 36 Code of Federal Regulations, Chapter III, Section 327.4 (f) (5.)), and certain restrictions appear to be documented in public resources from other agencies or entities.

There has been a growing public interest to fly, land, and dock seaplanes at Corps recreational sites. Corps onsite natural resource managers, rangers, and dam operating staff have a growing concern for public safety for recreational users (*e.g.*, boaters, campers, swimmers, etc.) in the recreation areas associated with Corps reservoirs. Similarly, concerns exist for the protection of Corps infrastructure (*e.g.*, dam and power lines). Current existing policy appears to be insufficient to clearly inform the public regarding allowed and restricted seaplane activities.

In response, Seattle District proposes to develop a district policy as stated in ER 1130-2-411.s. In preparation, Seattle District has researched existing seaplane policies in other Corps Districts with recreational sites, and sought comment on the recommended policy. This Final Environmental Assessment has evaluated the impacts of seaplane operations at these three dams only and found the Seaplane Policy provided a list of restrictions (see Appendix A) that would minimize impacts to the environment, Endangered Species Act (ESA)-listed species, aquatic and terrestrial habitat, cultural resources, global climate, socioeconomics, environmental justice, and treaty rights. These restrictions include a no fly zone of 500 feet around dam infrastructure, power lines, buoys, and no take-off or landing between 300 and 500 feet from recreation sites.

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1 INTRODUCTION

1.1 PROJECT BACKGROUND AND AUTHORITY

The U.S. Army Corps of Engineers (Corps) Seattle District oversees six operating projects: Lake Washington Ship Canal (LWSC), Howard Hanson Dam (HHD), Mud Mountain Dam (MMD), and Chief Joseph Dam (CJD) located in the state of Washington; Albeni Falls Dam (AFD) located in Idaho; and Libby Dam (LD) located in Montana (Figures 1, 2, and 3). LWSC is located in Seattle, WA and is a lock navigation system. HHD and MMD are flood control projects for the Green and White River Valleys. In addition, HHD is the main water supply for the City of Tacoma and has restricted public access. CJD, AFD, and LD are multipurpose hydropower project dams, operated and maintained by the Corps with Bonneville Power Administration managing the marketing and sale of the power. Of the six operating projects, four projects (MMD, CJD, AFD, and LD) have recreation sites managed by Seattle District Natural Resource staff at the site. CJD, AFD, and LD have multiple recreation facilities including day and overnight use campgrounds, picnic facilities, hiking and horse trails, swimming areas and boat docks in designated recreation sites along their reservoirs. The most common recreation activities in CJD, AFD, and LD are picnicking and boating. Since CJD, AFD, and LD have large and wide reservoirs, these operating units are the only ones with the capabilities to accommodate seaplane access to the recreation sites. While MMD has picnic tables, hiking and horse trails on its property, MMD's reservoir is closed to boat traffic, as it is typically either dry or in conditions unsafe for vessel traffic. HHD's reservoir (the Eagle Gorge Reservoir) is closed to all water contact activity (swimming, boating, and fishing) by virtue of its source as the municipal drinking water supply for the City of Tacoma. The LWSC hosts a variety of public recreational attractions including botanical gardens, park areas, picnic areas, viewing platforms, and fish passage viewing facilities. No public water access, swimming, or vessel launching is allowed or available at LWSC. Federal Aviation Administration (FAA) regulations prohibit seaplane take-off and landings within the vicinity of the LWSC. Take-offs and landings are allowed only in Lake Union.

In 1977, Title 36 of the Code of Federal Regulations (CFR) part 328 provided uniform policies and criteria to permit, under certain conditions, the operation of seaplanes at civil works water resource projects. According to Title 36 CFR 327.3 and 327.4, seaplanes, while taxiing on lakes are considered vessels by the U.S. Coast Guard and must follow the same marine rules of the road as all vessels on the lake. Seaplanes are permitted to taxi to different areas of lakes including those areas restricted for landings and take-off. Based on this CFR, the U.S. Army Corps of Engineers promulgated Engineering Regulation (ER) 1130-2-411, dated 15 November 1977, which was superseded by ER 1130-2-550 on 15 November 1996. Under the CFR and ER 1130-2-411, each District had one year to develop policies as to which lakes would be open or have certain restrictions to seaplane operations. No records can be found which indicate whether Seattle District developed a district-wide policy regarding seaplane operations, and no official policy is on file. E-mail records indicate that various restrictions may exist, but in general these restrictions were done at the project level.

There has been a growing public interest to fly, land, and dock seaplanes at Corps recreation sites. As seaplane operators interest to utilize the recreation sites increased, Corps onsite natural resource managers, rangers, and dam operating staff started to have a growing concern for public safety for recreational users (*i.e.*, boaters, campers, swimmers, etc.) in the recreation area and for the protection of Corps infrastructure (*i.e.*, dam and power lines), which elicited the need to develop a policy as stated in ER 1130-2-411. As a response, Seattle District researched existing seaplane policies in other Corps Districts with recreation sites, evaluated FAA fly zones at the operating projects, and drafted specific

restrictions needed for public safety and the protection of infrastructure. Based on the information gathered, LWSC, HHD, and MMD either have restricted fly zones in the area and/or do not have the minimum criteria for landing and taking-off from the sites, and the Corps proposes no changes to these existing restrictions. CJD, AFD, and LD are the only three operating projects that have large and wide reservoirs to accommodate seaplane operations, sufficient shoreline for tail anchorage offshore, and public interests.

This Final Environmental Assessment (EA) evaluates the environmental effects of the Corps proposed district policy on seaplane operation, including placing restrictions for seaplane operation at CJD, AFD, and LD.

1.2 PURPOSE AND NEED

The Corps main purpose of developing a policy with limited access and a set of guidelines and restriction zones for landing, take-off, and docking is to prevent potential destruction and damage to the infrastructure associated to the operating projects and boat traffic, accidents, injuries, fatalities, which are considered at high risk if a policy with seaplane operation restrictions are not established and implemented. The Corps believes such district policy is now needed to ensure public safety and for the protection of government properties and infrastructure.

1.4 LOCATION AND SCOPE OF ANALYSIS

This Final EA evaluates the access areas of seaplane operations in Rufus Woods Lake at CJD, Lake Pend Oreille at AFD, and Lake Koocanusa at LD, where the prohibitions of the policy includes the infrastructure associated with the operating projects and specifically in waters classified or zoned as “Fee Simple” by the Federal Government within Seattle District. (Figures 1, 2, and 3). The scope of the analysis of CJD will be within the 500 feet around the CJD infrastructure including the buoys, floating structures, trash booms, buildings, ports, bridges, towers and utility lines upstream of the dam. In addition, the analysis will include within 300 feet from the shores that make up Rufus Woods Lake. AFD’s scope of analysis will include within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure including along the shore lines of Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek recreation areas; while LD’s scope of work is within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure.

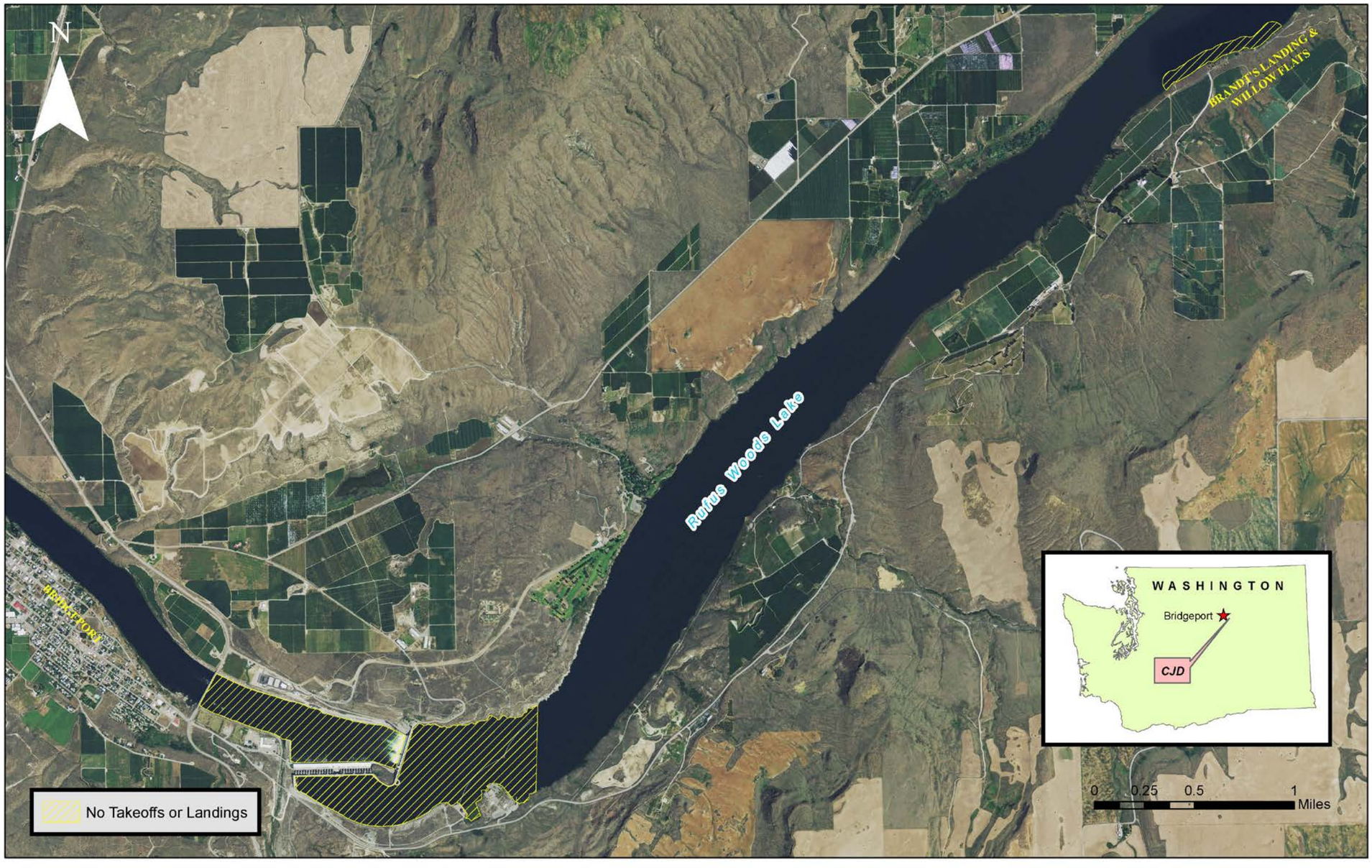


FIGURE 1: Aerial View of Chief Joseph Dam, Rufus Wood Lake, and Brandt's Landing

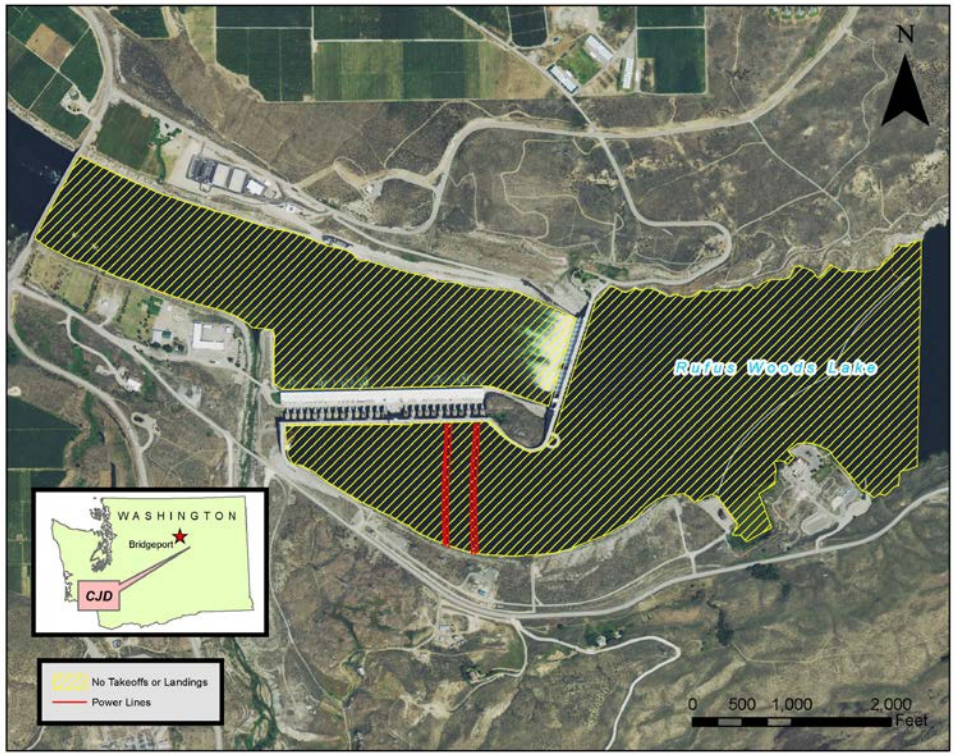


FIGURE 2: Chief Joseph Dam and Rufus Wood Lake restricted areas for seaplane operation with Brandt's Landing (lower right) approximately 5 miles upstream.

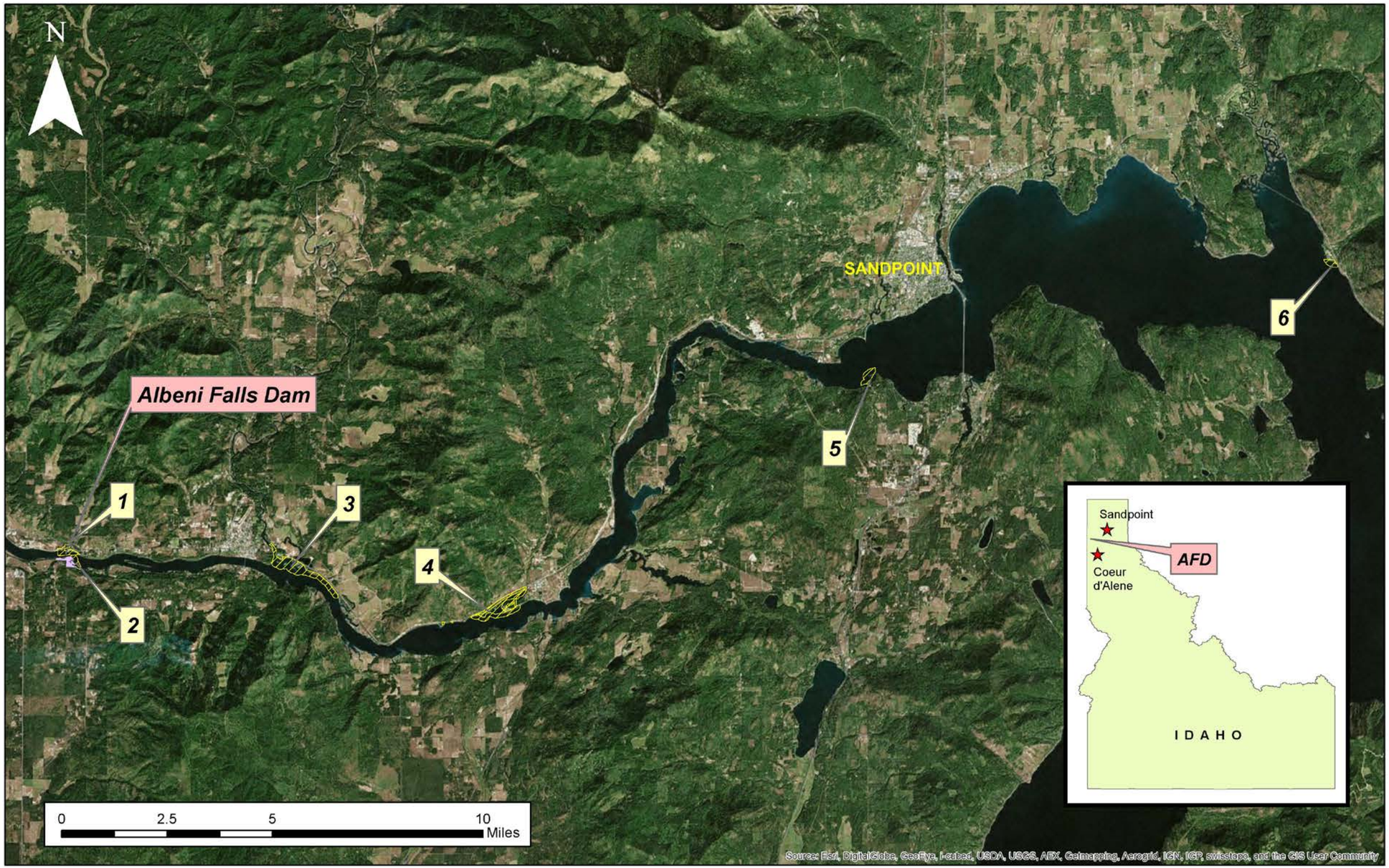
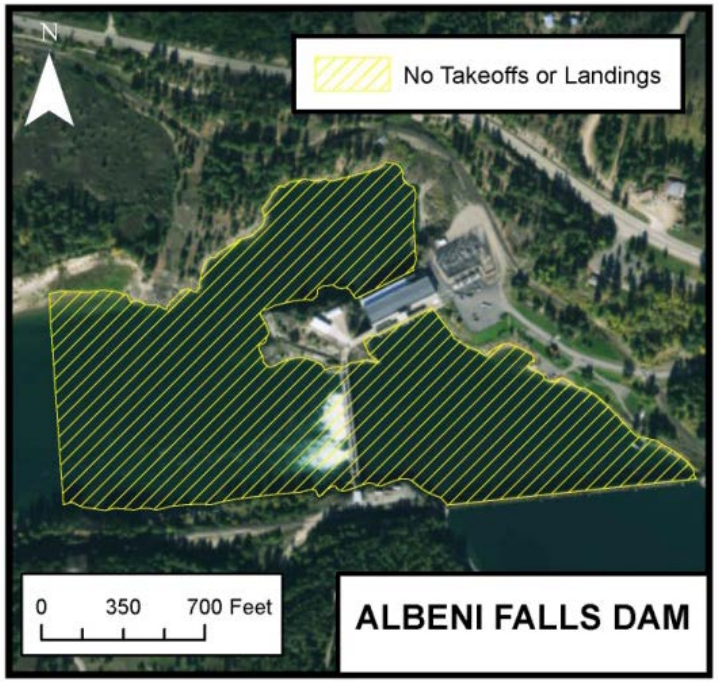


FIGURE 3: Albeni Falls Dam and the location of recreation areas managed by the US Army Corps of Engineers.



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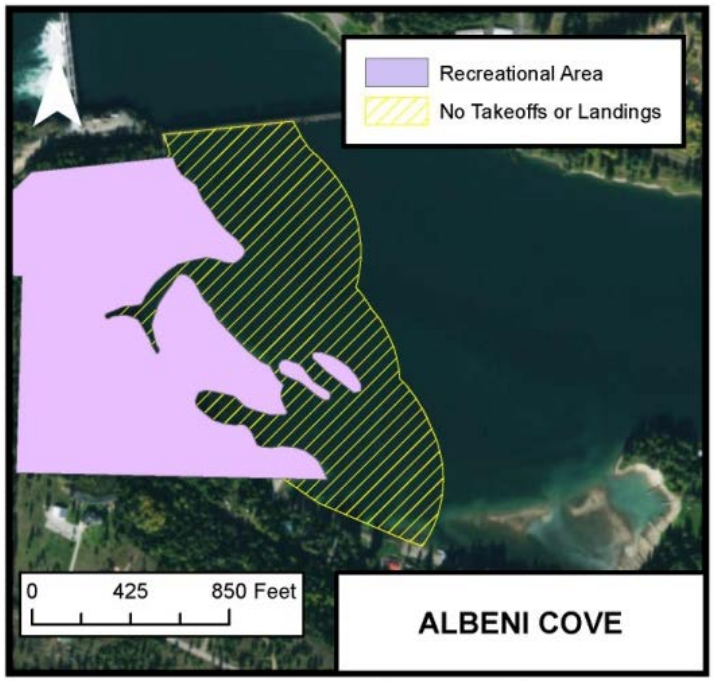

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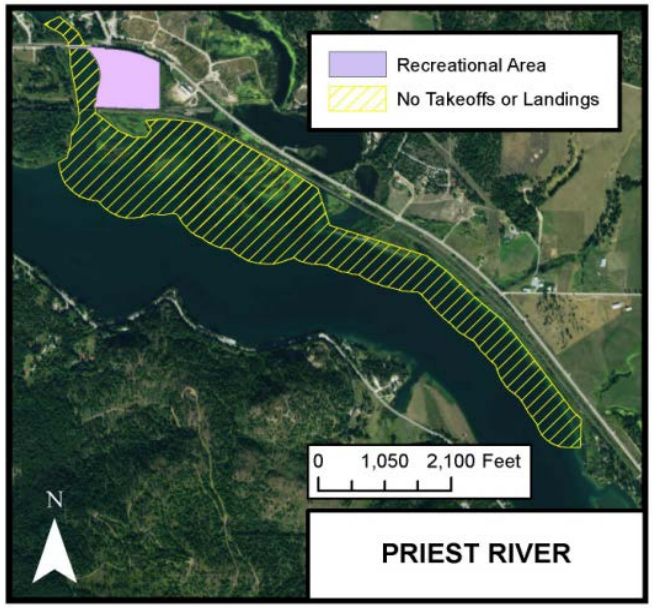

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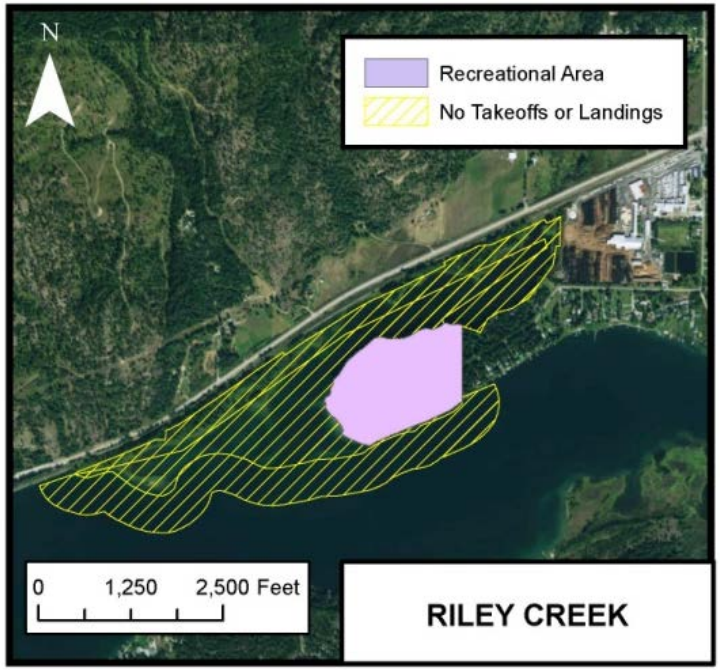
FIGURE 4: Albeni Falls Dam and Lake Pend Oreille restricted areas for seaplane operations at the Corps Recreation Sites (Pink filled areas) and Wildlife Management Areas.



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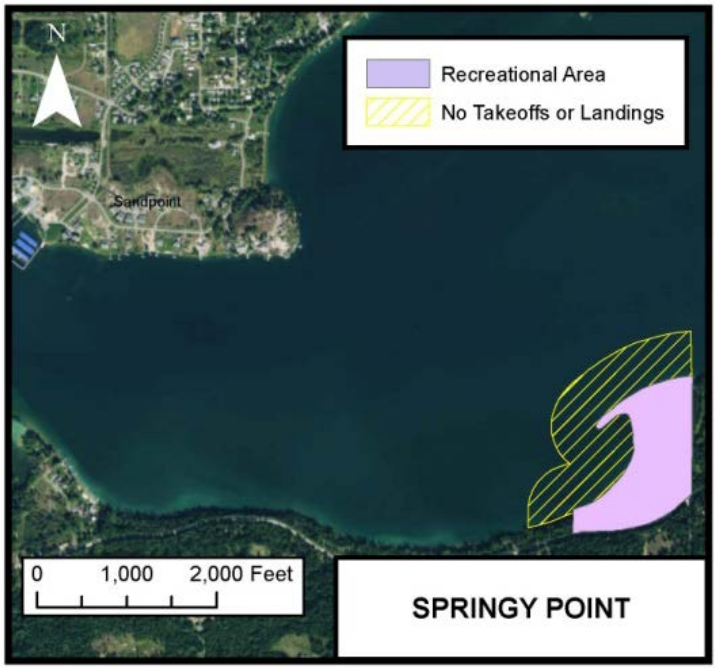

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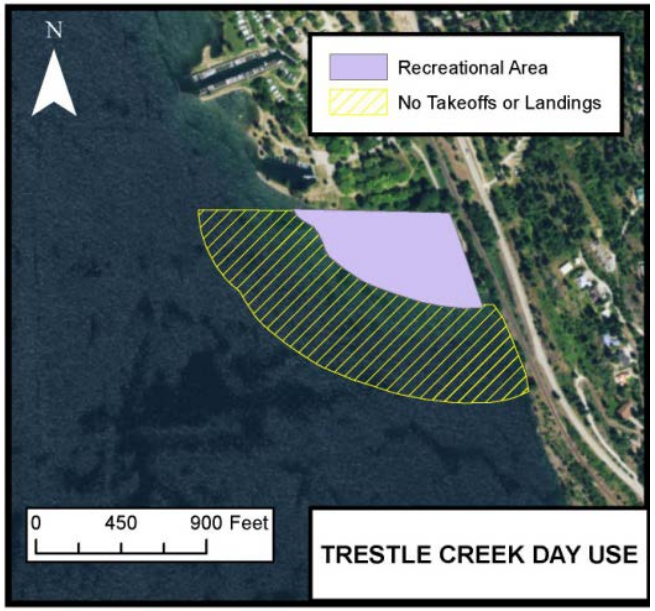

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FIGURE 5: Albeni Falls Dam and Lake Pend Oreille restricted areas for seaplane operations at the Corps Recreation Sites (Pink filled areas) and Wildlife Management Areas.

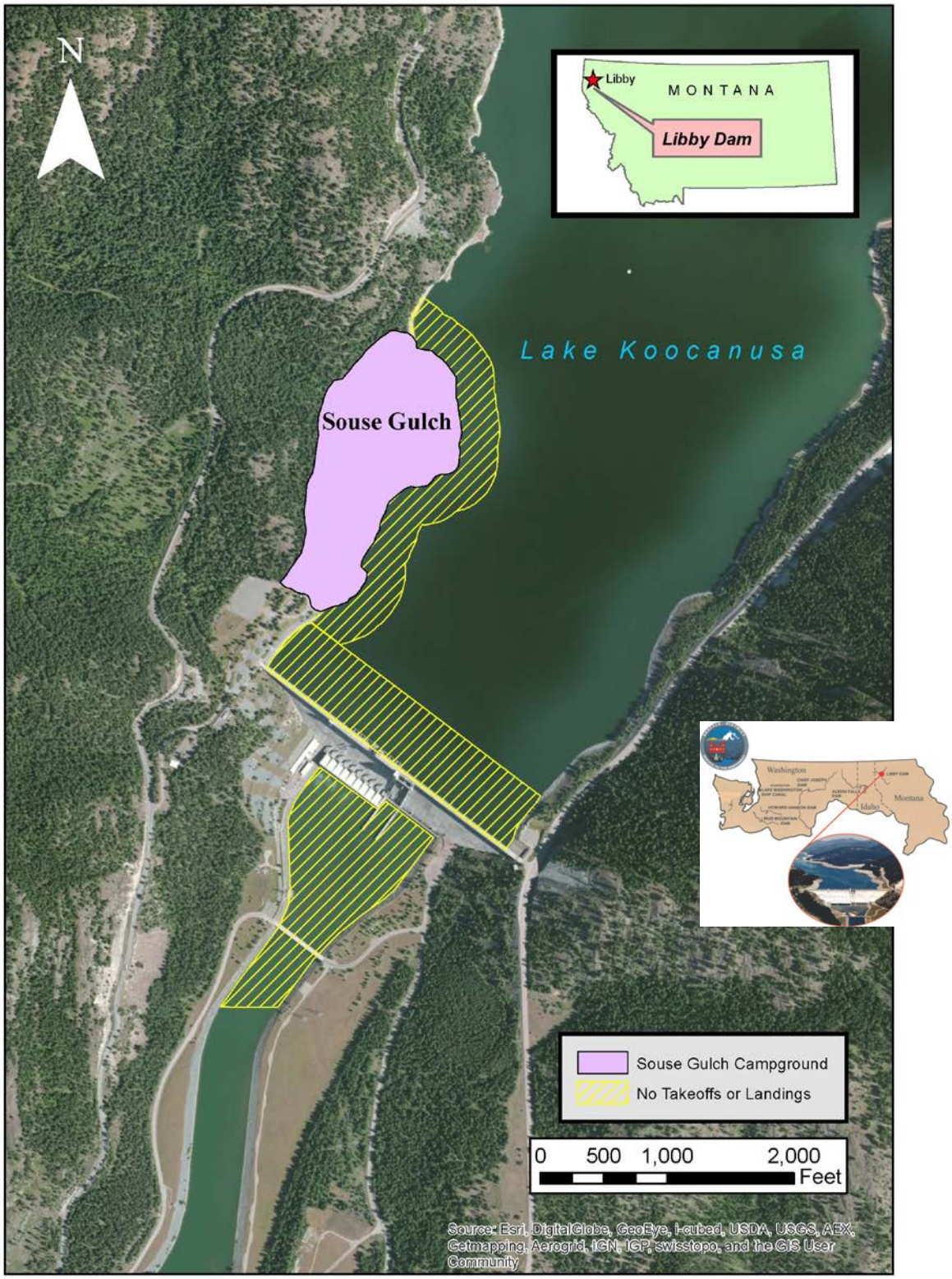

FIGURE 6: Libby Dam and Lake Koocanusa restricted areas for seaplane operations at the Corps Recreation Site (Pink filled areas).

2 ALTERNATIVES

2.1 ALTERNATIVE 1: NO ACTION

Alternative 1 ,"The No Action" alternative is being presented in order to establish the relative merits and disadvantages between taking no action and that of the action alternative. If the "No Action" is taken, seaplane operators have unspecified access to the infrastructure of the operating projects and recreation sites at CJD, AFD and LD while the remaining are subject to all appropriate State and Federal aviation laws that apply to aircraft operations upon or over project lands and waters; where a seaplane is defined as an aircraft properly registered with the Federal Aviation Administration and equipped to takeoff from and land on the water. After landing on the water, seaplanes are considered marine vessels and must adhere to the rules and regulations described under the provisions of Coast Guard Rule 18 (d) and Federal Aviation Regulation 91.115. On the water, all seaplanes and their operators shall keep well clear of all vessels and avoid impeding their navigation.

2.2 ALTERNATIVE 2: AGENCY PREFERRED ALTERNATIVE (RESTRICTIONS ON SEAPLANE LANDINGS)

Alternative 2, the "Agency Preferred Action" would meet the purpose and need of Seattle District's Seaplane Operation policy (Appendix A) because it would prevent potential destruction and damage to the infrastructure associated to the operating projects and to minimize boat traffic, accidents, injuries, and fatalities at the recreation sites, which are considered at high risk if a policy with seaplane operation restrictions are not established and implemented. Specific prohibitions for individual operating projects are listed below as well as District-wide prohibitions:

Authority by Individual Project and Site-Specific Restrictions

1. ***Albeni Falls Dam and reservoir***, authorized by Public Law 81-516 (81st Cong, 2nd Sess.) and the Flood Control Act of 1950. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing maneuvers are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam, or similar structure including 500 feet from the shore lines at Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek. In an emergency situation, pilots may land inside the 500 foot buffer. Sea planes are prohibited from mooring to any public courtesy boat dock.

2. ***Chief Joseph Dam and reservoir***, authorized by Public Law 82-469 (82nd Cong, 2nd Sess.). Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset on Rufus Woods Lake. Takeoff and landing maneuvers are prohibited ½ mile from Chief Joseph Dam and the Powerhouse. Pilots are to remain 500 feet from all terrestrial and floating structures, trash booms, buildings, ports, bridges, towers and utility lines. Pilots may land and take off 300 feet from the shores that make up Rufus Woods Lake.

3. ***Albeni Falls Dam and reservoir***, authorized by Public Law 81-516 (81st Cong, 2nd Sess.) and the Flood Control Act of 1950. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing maneuvers are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam, or similar structure including 500 feet from the shore lines at Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek. In an emergency situation, pilots may land inside the 500 foot buffer. Sea planes are prohibited from mooring to any public courtesy boat dock.

4. ***Libby Dam and reservoir***, authorized by Public Law 81-516 (81st Cong, 2nd Sess.) and the Flood Control Act of 1950. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing is prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam, or similar structure. Pilots may land and take off 300 feet from the shores of Lake Koocanusa in waters of the United States.

5. Lake Washington Ship Canal, authorized by House Document (HD) 953, (60th Cong, 1st Sess.) Seaplane takeoff and landing is prohibited by the FAA at the Lake Washington Ship Canal excluding Lake Union and Lake Union Reach. Additionally, the Seattle Police Department and the City of Seattle have placed a restriction speed on all vessels operating on Salmon Bar or around the Lake Washington Ship Canal of 7 knots or 8.055 miles per hour. The Seattle Municipal Code SMC 16.20.130 discusses the 7 knot restriction code placed on the referenced waters. Seaplane takeoff is not possible based on this regulation.

6. Howard Hanson Dam or Eagle Gorge Reservoir was authorized under Public Law 81-516, Rivers and Harbors Act of 1950. Howard Hanson Dam and all waters that make up the reservoir are closed to the general public. Pursuant to WAC 246-290-690 access to the reservoir by seaplane is prohibited.

7. Mud Mountain Dam and reservoir was authorized by the Flood Control Act of June 22, 1936, (74th Cong, 2nd Sess.). Seaplane use is prohibited at the dam and reservoir; the reservoir contains water during flood periods only and is emptied immediately when the flood has receded. During the fall, winter, and spring, the reservoir elevation fluctuates widely and often at a rapid rate making it unsafe for public use and unsuitable for seaplane operations.

<u>District-wide prohibitions and restrictions</u>

1. Pilots are responsible for knowing the rules and regulations pertaining to aircraft as set forth in the Title 36 CFR 327.4 and CFR 328 U.S. Army Corps of Engineers Title 36, Chapter III, Section 327.4 and Title 36 Code of Federal Regulations, Part 328 dated 15 November 1977. Copies are available from any Corps of Engineers Lake Office or by writing the Public Affairs Office at 4735 East Marginal Way South, Seattle, Washington 98134-2385.

2. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset.

3. Where not specifically restricted or prohibited, operating recreational seaplane are allowed seven days a week.

4. Commercial seaplane operations are prohibited unless authorized by District Engineer in writing.

5. No landings or take offs are permitted in no-wake areas.

6. On the water all seaplanes must be in conformance with U.S. Coast Guard boating safety requirements (Coast Guard Pamphlet CG-290; 46 CFR parts 25, 30; and 33 CFR part 175).

7. Operation of seaplanes is limited to recreational purposes only.

8. The operator must remain in the vicinity of the seaplane and be reasonably available to relocate the seaplane if necessary. Planes left unattended longer than 24 hours will be presumed to have been abandoned and may be impounded.

9. Seaplane operation including landings and take offs on Lake Pend Oreille, Rufus Woods Lake or Lake Koocanusa are at the risk of the planes owner, operator, and passenger(s). These lakes are operated as flood control/hydropower reservoirs with fluctuating pool elevations. Pilots are encouraged to contact Lake Project office(s) prior to flying for current lake elevations, cross winds and hazards including drift and storm debris. Addresses and phone numbers of each lake are listed below:

   Chief Joseph Dam
   PO Box 1120
   Bridgeport, WA 98813
   Phone: 509-686-2225

   Albeni Falls Dam
   Oldtown, ID 83822
   Phone: 208-437-3133

   Libby Dam Project Office
   17877 Mountain Highway 37
   Libby, MT 59923
   Phone: 406-293-7751

10. There are no mooring facilities for seaplanes. Pilots may moor their personal aircraft on shorelines open to the general public. Tying off to trees is prohibited. When approaching shorelines to moor, the taxi speed is restricted to 5mph.

11. Prior to using any designated public boat launching ramp, the seaplane operator must have written permission from the Operations Project Manager or the District Engineer. This includes all nautical seaplanes or planes with retractable landing gear.

12. Landing a seaplane within 100 feet of a vessel, water skier, swimmer, or scuba diver is strictly prohibited.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment at CJD, AFD, and LD and the environmental consequences between the alternatives. Since the activities of the policy does not impact, geomorphology, sediment, and Indian treaty rights, these resources are not assessed and analyzed. Thus, no further discussions of these topics are made throughout the EA.

3.1 WATER QUALITY

CJD. Rufus Woods Lake in general has good water quality and is determined to be oligotrophic or ultra-oligotrophic. Measurements of pH have very little variation with an average monthly pH values taken downstream of Grand Coulee Dam between 2000 and 2009 ranging between 7.96 and 8.12. Conductivity is relatively low in Rufus Woods Lake. Turbidity is generally low, especially in fall and early winter, increases in the spring, concurrent with the annual peak of river discharge and spring runoff due to higher levels of suspended solids in snowmelt, but average levels remain low at less than 1 nephelometric turbidity units (NTU) (Morris, 2011).

Dissolved oxygen in Rufus Woods Lake is good (generally higher than 8.0 mg/L), and decreases as elevated water temperatures reaches above 18° centigrade (C) that reduce the saturation level of water

for dissolved oxygen. Rufus Woods Lake is listed on Ecology's Water Quality 303(d) list for high temperature resulting from measurements taken just below Grand Coulee Dam (Ecology 2009a). Total dissolved gas (TDG) in the upper Columbia River and near Chief Joseph Dam can exceed Washington State maximum standards frequently, and for extended periods of time. TDG in Rufus Woods Lake is influenced primarily by Grand Coulee Dam and Canadian dam operations upstream, with TDG spikes reaching 140 percent in Rufus Woods Lake with the most recent occurrence in 2011 (USACE unpublished data).

AFD. Water quality has been monitored at several deepwater sites and shallow nearshore sites in Lake Pend Oreille since the late 1980s. Studies by Falter (1992) and Woods (2004) indicated that concentrations of phosphorus and nitrogen are low in Lake Pend Oreille. They considered the lake to be oligotrophic or nutrient-poor. Assessment of near shore water quality data collected between 1989 and 2003 (Falter 2004) and from 2003 through 2007 (TSWQC 2009) indicated no significant trend in nearshore nutrients, chlorophyll a, or transparency, as measured during the summer months. Falter (2004) concluded that near shore littoral zones maintained a meso-oligotrophic classification between 1989 and 2003.

In response to public concern over the presence of nuisance algae, Lake Pend Oreille was placed on the State of Idaho 303(d) list in 1994 and retained on the 303(d) list in 1996 and 1998. No specific pollutant was identified. In 1999, the Idaho Department of Environmental Quality (IDEQ) prepared a water quality assessment and concluded that the shallow near shore littoral zone was determined likely to degrade over time. Several likely sources of nutrients to the lake were identified including residential development, septic tanks, and urban runoff (TSWQC 2009). IDEQ formulated the *Pend Oreille Lake Subbasin Assessment and Total Maximum Daily Load (TMDL)* in 2001 (IDEQ 2001). The goal of the near shore nutrient TMDL is to track and manage increasing nutrient enrichment and biological productivity with the ultimate goal of reducing the nutrient load over time so that existing water quality standards will continue to be met. It established a lake wide near shore average water quality target of 9 µg/L total phosphorus with an action threshold of 12 µg/L during the critical summer months of June through September (IDEQ et al. 2004).

The Idaho section of the Pend Oreille River was included in the 2002 and 2008 Section 303(d) list as impaired for temperature, and total phosphorus. A TMDL for nutrients in the Idaho portion of the Pend Oreille River is currently being studied but none has been implemented yet.

LD. Lake Koocanusa is located within both the U.S. and Canada and water quality protection standards, objectives and/or criteria are not uniform across international, state, provincial, and tribal jurisdictions within the Kootenai River Basin. The Kootenai River Subbasin is naturally oligotrophic and nutrient poor because the Belt Series rocks are the dominant geologic influence (PWI 1999). Mining operations have been a part of the Kootenai River basin since the late 1800s (Georgi 1993). Many of the operations are extracting primarily lead, zinc, copper and silver with other companies mining for gold, iron, nickel, cobalt, sulfur, thorium, and uranium. The discharge and tailings piles at many of the abandoned mines are not monitored; some of them may be contributing significant amounts of heavy metal pollution to the Kootenai River system. However, in the 1950s and 1960s fertilizer production, sewage, lead-zinc mining, and vermiculite discharges caused serious declines in water quality to the point that native fish populations were impacted (USFWS 1999).

From 1953 to 1987 the Cominco fertilizer plant along the St. Mary River in British Columbia (a tributary to the Kootenai River) was a significant point source for phosphorous and metals loading within the Kootenai River (Kootenai River Network 2000). Logging, lumber and pulp mill operations within the Kootenai River basin were potential point sources for toxic chemicals, including chlorophenols and

dioxins. In addition, the Kootenai River Network (2000) reported urban development, recreation, and transportation contribute contaminants to the Kootenai River system through fuel and lubricant discharge, drainage ditch and sewer system runoff, municipal discharge from sewage treatment plants and accidental spillage. Kinnee and others (1995) report, indicated the presence and seasonal peaks of aluminum, arsenic, chromium, copper, iron, manganese, lead, and selenium between May 1994 and February 1995, with concentration levels of arsenic, chromium, lead, and selenium exceeding EPA chronic or acute criteria for fresh water. Results from contaminant study performed in 1998 and 1999 showed that water concentrations of total iron, zinc, and manganese, and the PCB Aroclor 1260 exceeded suggested environmental background levels (Kruse 2000), where PCB Aroclor concentrations exceeded the EPA freshwater quality criteria of 0.014 ug/L by about 40 times.

In 2012, the Montana Department of Environmental Quality (MDEQ) under Section 303 (d) of the Clean Water Act (CWA) listed the Lake Koocanusa as impaired for selenium from an unknown source "outside state jurisdiction or borders". This pollutant was listed for Lake Koocanusa for the first time in 2012, and is listed as a low priority on the TMDL schedule. It is the only listed impairment for Lake Koocanusa. Despite the presence of selenium, the state indicates that the water quality is classified as B1, suitable for drinking, culinary and food-processing services after conventional treatments [to remove naturally present impurities], and is fine for swimming, bathing, aquatic life, and other uses. Several tributaries to Lake Koocanusa were listed as impaired due to sedimentation/siltation, though this impairment must have been insignificant in Lake Koocanusa as it was not listed for the reservoir.

3.1.1 Alternative 1: No Action

Under the "No Action" alternative, water quality would continue its existing state and process. The risk of an accident occurring around the power lines, the dam, or at recreation facilities is possible without proper restrictions in place. If an incident did occur, the disturbance from the incident or response operations may decreased if a fire was ignited from the accident; debris from the power line or dam's infrastructure may slightly increase turbidity; and hydrocarbon spillage is likely to occur.

3.1.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

With the agency preferred alternative, the restricted fly zones around the operating projects sites and their recreation sites would decrease the probability of an accident associated with the power lines and/or infrastructure at CJD, AFD, and LD. Restricting seaplanes to moor at CJD and AFD recreation sites would decrease the rate of water degradation occurring in the shallow nearshore littoral zone.

3.2 Aquatic and Terrestrial Vegetation

CJD. Four major plant communities exist within the dam and lake area: (1) *Artemisia tridentata/ Pseudoroegneria spicata* (big sagebrush and bluebunch wheatgrass, respectively); (2) *Artemisia tripartite/Festuca idahoensis* (threetip sagebrush and Idaho fescue); (3) the riparian streamside plant communities; and (4) a coniferous tree community. Wetland communities are interspersed in seeps and along the shoreline in isolated areas often coinciding with riparian habitats.

The big sagebrush/wheatgrass community and the threetip sagebrush/ fescue community are characteristic of the arid steppe province of the Columbia basin. Bitterbrush, and rabbitbrush are also found in this community in addition to bluebunch wheatgrass, needle and thread grass, Great Basin wild rye, cheatgrass, sand burr, Dalmatian toadflax, and annual bluegrass, the grass/forb component. (Fisher 2010). The riparian plant community of Rufus Woods Lake is not continuously established along the banks: it is found along small streams and seeps running down the slopes. The vegetation generally

consists of serviceberry, squaw currant, golden currant, black hawthorn, mountain alder, Wood's rose, Bebb willow, and red-osier dogwood that provides essential forage and cover habitat for wildlife. Mock orange, mallow ninebark, ocean-spray, chokecherry, smooth sumac, and quaking aspen are less common. The fourth community, the coniferous tree community, is scarce along most of the shoreline of Rufus Woods Lake and consist mainly of Ponderosa pine often appearing singly or in small groups, and occasionally in large concentrations. Douglas fir is found on a few north facing, moister slopes, and a few individuals of Rocky Mountain juniper are scattered along Rufus Woods Lake. Along the lower (downstream) half of the lake, trees are widely spaced instead of grouped in clusters. In a few areas, ponderosa pines grow in loose stands located on relatively steep hillsides suffused with seeps. On north-facing slopes, the pines become more densely packed and are mixed with Douglas firs. The understory plants consist of some of the same species that grow in the riparian communities.

Wetlands are relatively scarce along the shorelines of Rufus Woods Lake. A narrow band of emergent aquatic vegetation, primarily consisting of rushes and sedges, is present along much of the shoreline of the lake. However, five species of fully aquatic plant species are observed throughout the lake, including elodea, Eurasian water-milfoil, sago pondweed, curly leaf pondweed, and watercress. Eurasian water-milfoil is a nuisance aquatic plant that was introduced into the lake in 1980 or 1981. The present levels of the plant are not causing any significant problems in the lake and do not warrant active management. The population has stabilized, but the Corps will continue to monitor.

AFD. A variety of vegetation communities surround Lake Pend Oreille, with the dominant communities being: Park-like, found in the developed areas; wetlands, to include marshes and wet meadows; and riparian habitats. Operation of the dam and resultant seasonal changes in lake pool levels are primary factors controlling the extent and nature of wetland communities. About 80 percent of the Pend Oreille basin is covered by coniferous forests with Ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*P. contorta* ssp.) as the dominant tree species. At elevations above 3,600 feet, mature forests are dominated by Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), subalpine fir (*Abies lasiocarpa*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). The dominant species are black cottonwood (*Populus balsamifera ssp. trichocarpa*), alder (*Alnus* spp.), willow (*Salix* spp.), Douglas fir, western red cedar, lodgepole pine (*Pinus contorta*), snowberry (*Symphoricarpos albus*), spirea (*Spirea spp*.), cinquefoil (*Potentilla* spp.), sneezeweed (*Helenium automanale*), sedges, and redtop grass (*Argrostis gigantea*). The trees in the riparian habitat are used by nesting ospreys and great blue herons, as well as many species of song birds and raptors, including bald eagles. Shrubs provide cover and feeding areas for many species of small birds and small mammals.

Wetland communities occupy approximately 8,000 acres in and around Lake Pend Oreille. These communities are owned and managed by multiple land owners including the Corps, IDFG, USFS, and private land owners. The wetlands are broken down into three general types: marshes, wet meadows; and aquatic vegetation. The marshes are freshwater and shallow in nature, and are dominated by cattail (*Typha* sp.) and canarygrass (*Phalaris arundinacea*). Sedges (*Carex* spp.), bentgrass (*Agrostis* spp.), rushes (*Juncus* spp.), bulrushes (*Scirpus* spp.), and spike rushes (*Eleocharis* spp.) are also present, though rarely in large concentrations. This community extends from the mean high-water line (2062.5 feet) down to about 2060 feet. Cattails dominate the lowest zone at the shallow marsh but may be present throughout the zone. Canarygrass is present from about 2 feet above the high-water line to 2.0 feet below, while sedges and spike rushes may be found form 1 foot above the water line to 1 foot below. The shallow marsh community is an important feeding and nesting habitat for a wide variety of birds, mammals, and fish. The community also provides wave and erosion protection for adjacent shorelines. Wet meadows are located at a higher elevation than shallow marshes. Sedges and rushes dominate wet

meadows, but bentgrass, canarygrass, bluegrass (*Poa* spp.), and spike rushes are all common constituents. Wet meadows appear to extend upward to approximately 2 feet above mean high water. They can also be found adjacent to tributaries of the lake, as perched wet meadows. Only 185 acres of this habitat type has been identified, with 80 acres at Clark Fork, over 60 acres in Cocolalla Slough, and the remainder in small scattered patches. These wetland communities provide feeding and nesting habitat for a variety of birds and small mammals. Submerged aquatic vegetation is found primarily in quiet protected backwater areas where the bottom is predominately silt and organics, and in water depths ranging about 12 to 32 feet below maximum pool. The plant communities are dominated by pondweed (*Potamogeton* spp.), bladderwort (*Utricularis major*), and watermilfoil (*Myriophyllum* spp.). Pond lilies (*Nuphar* spp.), smartweed (*Polygonum punctatum*), waterweed (*Elodea spp*.), and other aquatic vegetation are also present. Current operations of the Albeni Falls Dam, which keeps water levels at elevation 2062 feet during the summer months, favor aquatic plants species that tolerate deeper water conditions (e.g. green algae such as, *Chara* spp., and *Nitella* spp.). The reduction in abundance and diversity of important waterfowl food plants has affected the habitat quality for Lake Pend Oreille (Wolflin, 1988). Submerged aquatic vegetation provides food and habitat for fish and invertebrates, and food for waterfowl.

Two invasive plant species, Eurasian watermilfoil and flowering rush, have become established in the lake and river in recent years. Both species outcompete and displace the native vegetation. Eurasian watermilfoil has been found at depths of three to almost 30 feet, with most at six to 25 feet (Madsen and Wersal 2008). Flowering rush is an emergent aquatic perennial considered an invasive noxious weed. This species was first confirmed in the lake in 2008 and covered an estimated twelve acres. By 2009 the plant had increased its extent to over 20 acres in portions of the lake. It is found in riparian zones, wetlands, and aquatic environments to depths of about 13 feet.

Habitat in some of the recreation areas could be described as “park like” with lawns, open woodlands, and meadows. The trees are generally spaced further apart and do not have a dense canopy cover. The grassy areas can be more natural, such as meadows, or well-maintained mowed lawns. Trees present are generally native coniferous and riparian species such as pines, firs, western red cedar, western larch, willows, alders, and black cottonwood. Because of heavier use of these areas by people, overall wildlife presence tends to be less, and to a certain extent, the animals present are habituated to human activity. Furthermore, park areas are one of the major sources of conflict between people management and wildlife management.

LD. Vegetation of the Kootenai Subbasin is typical of the Northern Rocky Mountain Forest-Steppe-Coniferous Forest-Alpine Meadow Province (Bayley 1995). Engelmann spruce *(Picea englemanni)*, and lodgepole *(Pinus contorta)* grow at higher elevations, giving way to forests of mostly Douglas-fir (*Pseudotsuga menziesii)*, lodgepole, aspen (*Populus tremuloides,* Rocky Mt. Juniper *(Juniperus scopulorum)*, western larch *(Larix occidentalis)*, Rocky Mountain Maple *(Acer glabrum)* at mid to low elevations. Other common tree species include western hemlock *(Tsuga heterophylla)*, western red cedar (*Thuja plicata)*, ponderosa pine *(Pinus ponderosa)*, and grand fir *(Abies grandis)*. On river floodplains there is ponderosa pine, Douglas-fir, black cottonwood *(Populus trichocarpa)*, paper birch *(Betula papyrifera)*, willow *(Salix spp*., mostly *S. scouleriana*), chokecherry *(Prunus virginiana)*, alder (*Alnus sinuate and A. tenuifolia)*, dogwood *(Cornus stolonifera)*, rose *(Rosa acicularis*, *R. gymnocarpa, R. woodsii)* and snowberry *Symphoricarpos albus and S. occidental)*. Willows, alder, aspen, dogwood, cattails *(Typha latifolia)*, meadow grasses, and sedges dominate wetlands. Due to the species richness found in Lake Koocanusa, a variety of understory shrubs (Huckleberry/*Vaccinium* spp., Devil’s Club/*Oploplanax horridus*, Big Sagebrush/*Artemisia tridentate*, Common Juniper/*Juniperus communis*, Western Trumpet Honeysuckle/*Lonicera ciliosa*); and wetland plants (Trout Lily/*Erythronium grandiflorum*,

Trillium/*Trillium ovatum*, and Pondlilly/*Nuphar* spp.); vines *(*Oregon Grape*/Berberis (Mahonia) repens*, Twinflower grass/*Linnaea borealis*, Pinegrass*/Calamagrostis rubescens*, Cheatgrass/*Bromus vulgaris*, Bluebunch Wheatgrass*/Agropyron spicatum*, *and* Elk Sedge *Carex geyeri*); ferns Lady Fern/*Athyrium filix-femina,* Wood Fern*/Cystopterus fragilis);* and forbes *(*Bitterroot*/Lewisia rediviva*, and Lupine/*Lupinus* spp.) are found sporadically in and around LD.

3.2.1 ALTERNATIVE 1: NO ACTION

Under the "No Action" alternative, aquatic and terrestrial vegetation would continue to thrive, at its existing state and process. The risk of an accident around the power lines, to the dam, or at a recreation site would remain high. If an accident did occur the surrounding vegetation would be damaged or burned from a plane crashing, and more drastically if the crash occurred into the power lines and dam. A hydrocarbon spillage during and after an accident is likely to occur. Depending on the type and amount of oil spilled, geology of the area, and rate of water flow, the area of contamination could spread quickly on the shoreline and a cleanup would be necessary (EPA, 1999). The presence of oil in the environment can prevent germination and growth of plants, and can prevent most vegetation from rebounding, or may result in die-offs for some species (USFWS 2004) and may decrease habitat use in the area, alter migration patterns, alter food availability, and disrupt life cycles (NOAA 2010, USFWS 2004), thus, causing higher risk of degradation of vegetation along the shoreline if this alternative was selected.

Seaplane operators could visit CJD boat dock and AFD's recreation sites and potentially moor in the area without restrictions. The shallow nearshore littoral zone will continue its rate of degradation.

3.2.2 ALTERNATIVE 2: AGENCY PREFERRED ALTERNATIVE (RESTRICTIONS ON SEAPLANE LANDINGS)

With the preferred alternative, the added restriction zones around the operating projects and its recreation sites would ensure a lower probability of an accident at CJD, AFD, and LD, and lower the probability of an accident at recreation areas, minimizing the occurrence of fire and hydrocarbon spillage. Conditions restricting seaplane moorage would decrease the rate of vegetation degradation occurring in the shallow nearshore littoral zone at CJD and AFD recreation sites.

3.3 FISH AND WILDLIFE

CJD. Wildlife species typical of shrub steppe communities inhabit the site and surrounding area. Coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), yellow pine chipmunk (*Eutamias amoenus*), deer mouse (*Peromyscus maniculatus*), and Great Basin pocket mouse (*Perognathus parvis*) have all been observed in the vicinity of the site.

Migratory and wintering waterfowl present on the Rufus Woods Lake include eared grebe (*Podiceps nigricollis*), horned grebe (*Podiceps auritus*), western grebe (*Aechmophorus occidentalis*), mallard (*Anas platyrhynchos*), American wigeon (*Anas americana*), redhead (*Aythya americana*), northern pintail (*Anas acuta*), canvasback (*Aythya valisineria*), scaup species (*Aythya sp*.), bufflehead (*Bucephala albeola*), goldeneye species (*Bucephala sp*.), ruddy duck (*Oxyura jamaicensis*), and American coot (*Fulica americana*). Great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), and common merganser (*Mergus merganser*) are found here in summer also. Western kingbird (*Tyranus verticalis*), eastern kingbird (*Tyranus tyrannus*), chipping sparrow (*Spizella passerina*), northern oriole (*Icterus galbula*), and western meadowlark (*Sturnella neglecta*) are passerines found in summer. There are nine known active bald eagle nests on Rufus Woods Lake. Approximately 20 to 65 eagles come and winter at Rufus Woods Lake (October to March).

Kokanee (*Oncorhynchus nerka*) are found in Rufus Woods Lake. There are no anadromous salmon or steelhead in Rufus Woods Lake. Other fish found in the lake include mountain whitefish (*Prosopium williamsoni*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), yellow perch (*Perca flavescens*), walleye (*Stizostedion vitreum*), white sturgeon (*Acipenser transmontanus*), burbot (*Lota lota*), northern squawfish (*Ptychocheilus oregonensis*), peamouth (*Mylocheilus caurinus*), chiselmouth (*Acrocheilus alutaceus*), carp (*Cyprinus carpio*), and several species of suckers (*Catastomus* spp.).

AFD. Numerous bird and mammalian species reside and utilize the area on and round Lake Pend Oreille. Most of the 23 species of waterfowl recorded in Bonner County are winter migrants. Resident species of ducks and Canada geese (*Branta canadensis)* nest and rear their young on and around the lake, in emergent marshes, on islands which provide protection from mammalian predators, and on manmade nest platforms. Mallards (*Anas platyrhynchos)*, three species of teal (Cinnamon Teal/*Anas cyanoptera, Blue-wing Teal/Anas discors* and Green-wing Teal*/Anas crecca)*, wigeons (American Wigeon/*Anas Americana), and other waterfowl including* Northern Pintail/ *Anas acuta,* and Northern Shoveler/*Anas clypeata*, and pied-bill grebes *(Podilymbus podiceps)* are among the commonly found nesting along the shoreline or in adjacent marshes. During the fall and spring, the lake provides a staging area for migrating waterfowl. Dabbling ducks, such as mallards and pintails, occur in peak numbers in the spring. These species feed on the early green vegetation along the exposed shoreline as well as insects. Large numbers of diving ducks, such as redheads (*Aythya american)* overwinter in the region concentrating in areas of submerged aquatic vegetation. Oden Bay, Bottle Bay, Pack River Delta (prior to freeze-up), and the Sandpoint area are the historic wintering areas for roughly 80 percent of the Pacific flyway population of redhead ducks.

Lake Pend Oreille hosts significant populations of wading birds such as great blue herons (*Ardea Herodias)*; shorebirds (Belted Kingfisher/ C*eryle alcyon*, Dipper/*Cinclus mexicanus,* Spotted Sandpiper*/Actitis macularia,* and Western Grebe/*Aechmophorus occidentalis)*, gulls *(*Herring Gull*/Larus argentatus* and California Gull/*Larus californicus)*, upland game birds, wild turkey (*Meleagris gallopavo)* and ruffed grouse (*Bonasa umbellus)*; songbirds, Yellow-rumped Warbler *(Dendroica coronate)*, Rosy Finch *(Leucosticte arctoa),* Mountain Chickadee *(Poecile gambeli),* Western Bluebird *(Sialia Mexicana),* European Starling (*Sturnus vulgaris);* and House Wren (*Troglodytes aedon)*, and numerous other families are highly visible in the study area utilizing the lake and adjacent wetlands. Great blue herons are year-round residents, although a portion of the population migrates in the winter. Three heron rookeries adjacent to the lake were identified in the 2009 nesting season (Moulton, 2010). Shorebirds utilize appropriate habitats during the spring and fall migration. The highest concentrations occur in spring when shoreline mud-flats are most extensive (USACE, 2012).

Raptors including hawks (Red-tailed Hawk *(Buteo jamaicensis),* Swainson's Hawk *(Buteo swainsoni),* and Cooper's Hawk (*Accipiter cooperii))*; owls *(*Northern Pygmy Owl *(Glaucidium gnoma),* Boreal Owl *(Aegolius funereus),* and Northern Saw-Whet Owl *(Aegolius acadicus)*; bald eagles *(Haliaeetus leucocephalus)*; and ospreys (*Pandion haliaetus).* Upland game birds prefer to use upland and riparian habitats. Hawks and owls often nest in riparian trees and open woodlands, hunting small birds and mammals in forests and open grasslands. Upland game birds are relatively common, particularly where agricultural lands adjoin forest lands. Deciduous riparian growth with its proximity to water or marsh and vertical habitat structure provides habitat for a number of perching (song) birds. Many of the species found in riparian habitats are summer residents that nest, forage, and utilize the cover of the riparian zone and/or adjacent habitats. Blackbirds *(Turdus merula)* and marsh wrens *(Cistothorus palustris)* are the most common breeding perching birds in the lakeshore marshes (USACE, 2012). Over 28 species of overwintering perching birds were identified during the 2010 Christmas Bird Count that takes place on a portion of the study area; perching birds seen were dominated by crows, ravens, chickadees, starlings,

Bohemian Waxwings, and goldfinches (National Audubon Society, 2011). Eagles and ospreys nest and loaf in upland and riparian forests, feeding in and around the lake from mid-March through October. The osprey populations of northern Idaho and northeastern Washington continue to constitute the largest nesting concentration in the western states. Large nesting concentrations include the Clark Fork delta, the lake east of Dover, and numerous other areas along the shoreline. These birds forage in the lake and tributaries for a variety and require large trees with unobstructed views for nesting, although pilings and bridges are occasionally utilized. Bald eagles both nest and overwinter on Lake Pend Oreille and the river. Of six known nests in the area, only two have been consistently successful in the past few years (USACE, 2012). Approximately 80 bald eagles wintered on Pend Oreille Lake in 2011/2012 season (Hull, 2012). Eagles prefer perches in tall trees, in riparian habitats, or on surrounding bluffs. The major food source for eagles includes spawned out salmonids and weakened waterfowl. Eagles are also known to scavenge, feeding off dead animals or garbage.

Aquatic furbearers including beaver (*Castor canadensis*), muskrat (*Ondontra zibethicus*), mink (*Mustela vison*), and river otter (*Lutra canadensis*) are also found in Lake Pend Oreille. The river otter is uncommon in the lake, and beaver, muskrat, and mink are not abundant. Where beaver are found, their bank burrows are located at summer high pool elevation. Beaver activity is higher in sloughs and rivers than in the lake. Muskrat, which inhabit emergent marshes, occur in low numbers. Muskrat build lodges of cattails and bulrushes with a submerged entrance, creating an enclosed nest. Mink nest in riparian habitats and along tributary drainages but forage chiefly in marshes. Muskrat is one of their main prey items, but mink also take other small mammals, birds, and amphibians.

Big game species such as moose (*Alces alces*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), white-tailed deer (*O. virginianus*), mountain goat (*Oreamnos americanus*), domestic cattle (*Bos* spp.), with black bear (*Ursus americanus*), and mountain lion (*Felis concolor*) as primary predators; numerous small mammals such as shrews (*Sorex* spp.), mice (*Peromyscus* spp.*, Mus musculus*, *Reithrodonotomys megalotis*), squirrels (*Spermophilus* spp.) with rabbits (*Sylvilagus nuttallii* and *Lepus townsendi*.), and snowshoe hares (*Lepus americanus*) inhabiting both riparian and upland habitats; bobcats (*Lynx rufus*), coyotes (*Canis latrans*), raccoons (*Procyon lotor*), weasels (*Mustela frenata*), and skunks (*Mephitis mephitis*) as common carnivores in the region (Bonneville Power Authority, 1996; USACE, 1983).

Lake Pend Oreille and the Pend Oreille River are home to a variety of native and non-native fish and support a significant recreational fishery. Major species include bull trout (*Salvelinus confluentus*--listed as threatened under the Endangered Species Act), rainbow (Kamloops) trout (*Oncorhynchus mykiss*), lake trout or mackinaw (*S. namaycush*), cutthroat trout (*O. clarki*), kokanee (sockeye salmon) (*O. nerka*), bass (*Micropterus* spp.), whitefish (*Prosopium* spp.), yellow perch (*Perca flavescens*) and sunfish (*Lepomis* spp.). Other fish commonly found in the Pend Oreille River include northern pikeminnow (*Ptychocheilus oregonensis*), peamouth (*Mylocheilus caurinus*), largescale sucker (*Catostomus macrocheilus*), longnose sucker (*Catostomus catastomus*) and brown bullhead (*Ameiurus nebulosus*).

Kokanee, while not native to the Pend Oreille system, are an important prey species for threatened native bull trout, and fishing for both kokanee and bull trout has been curtailed in order to support population recovery efforts for both species. Coldwater species such as trout and kokanee tend to occupy the deeper waters of the main lake while the warm water species are more prevalent in the near-shore areas and the Pend Oreille River between Sandpoint and the dam. The project area provides some habitat value, especially to the warm-water species, although drawdowns of the reservoir in winter may negatively affect warm water fish habitat. The shoreline is characterized by shallow water at summer pool and is exposed and dry during most of the drawdown period.

LD. Wildlife species found in Lake Koocanusa include raptors (Golden Eagle/*Aquila chrysaetos,* Red Tailed Hawk/*Buteo jamaicensi,* Swainson's Hawk/*Buteo swainsoni,* Bald Eagle/*Haliaeetus leucocephalus)*, owls (Long-Eared Owl/*Asio otus* and Great Horned Owl/*Bubo virginianus,* birds (House Finch/*Carpodacus mexicanus,* Common Raven/*Corvus corax,* Steller's Jay/*Cyanocitta stelleri,* Yellow Warbler/*Dendroica petechia*, Common Loon/*Gavia immer,* Harlequin Duck/*Histrionicus histrionicus,* Song Sparrow/*Melospiza melodia,* House Sparrow/*Passer domesticus,* Black-Billed Magpie/*Pica,* Mountain Chickadee/*Poecile gambeli*, Western Bluebird *Sialia Mexicana,* Red-Breasted Nuthatch/*Sitta Canadensis*, European Starling/*Sturnus vulgaris* Tree Swallow/*Tachycineta bicolor,* and Winter Wren *Troglodytes troglodytes),* bats (Big Brown Bat/*Eptesicus fuscus,* Silver-haired Bat/*Lasionycterus noctivagans* and Townsend's big-eared Bat/*Corynorhinus townsendi)*, small terrestrial mammals and other species common to the region. Deer (*Cervidae* sp.) and Rocky Mountain elk (*Cervus Canadensis)* eat the twigs and foliage of Oregon grape, ponderosa pine, and Douglas fir, as well as shrubs such as snowberry. White-tailed deer show a preference for kinnikinnick (bearberry), the fruit of which is also eaten by blue grouse (*Dendragapus obscures)*. Red squirrels (*Sciurus vulgaris*) are insectivorous during spring and summer, but turn to the seeds of Douglas fir and ponderosa pine during fall and winter. Black bears *(Ursus americanus)* utilize these areas as well, feeding on berries, tubers, insects, small mammals, and honey. Several species of bats breed in the area and are a common sight at dawn and dusk when they are out foraging for insects. Although the understory vegetation is diverse, the overstory vegetation is mostly composed of coniferous trees, and the bird life is therefore representative of a coniferous forest, including such species as mountain chickadee (*Poecile gambeli)*, red-breasted nuthatch (*Sitta Canadensis)*, northern flicker (*Colaptes auratus),* American robin (*Turdus migratorius)*, and dark-eyed junco (*Junco hyemalis oreganus)*. Most of these species are insectivorous, but the nuthatch also eats the seeds of Douglas fir and ponderosa pine. Other mammals found around the area of Lake Koocanusa are moose *(Alces alces)*, coyote (*Canis latrans),* gray wolf *(Canis lupus),* beaver *(Castor Canadensis),* mountain lion (*Felis concolor),* and Bobcat *(Lynx rufus).*

Fish species that are located within Lake Koocanusa and may occur within the project area vicinity are yellow perch (*Perca flavescens),* westslope cutthroat trout (*O. clarki lewisi)*, kokanee salmon (*O. nerka),* bull trout (*Salvelinus confluentus),* mountain whitefish (*Prosopium williamsoni),* burbot (*Lota lota),* redside shiner (*Richardsonius balteatus),* peamouth chub (*Mylocheilus caurinus),* northern pikeminnow (*Ptychocheilus oregonensis),* largescale sucker (*Catostomus macrocheilus),* longnose sucker (*Catostomus catostomus),* rainbow trout *(Oncorhynchus mykiss),* brook trout (*S. fontinalis),* brown trout (*Salmo trutta),* northern pike (*Esox lucius),* redband trout (*O. mykiss gairdneri).*

Construction of Libby Dam created a barrier to upstream fish passage, separating two different aquatic environments, a regulated river downstream from the dam and a fluctuating reservoir upstream from the dam, each with its distinctive fish community. The establishment of the dam converted river spawning, juvenile rearing, migratory passage, and resident fish habitat to a lake environment. Water level fluctuations greatly influence biological production and available fish habitat in Lake Koocanusa. Due to fluctuating water levels, the lake impacted established riparian zones, backwater areas, and shoreline vegetation that would naturally provide cover and support nutrient input and insect prey. With the change in available habitat types, the fish assemblage in the reservoir has shifted over time. Westslope cutthroat trout, mountain whitefish, and rainbow trout abundances have declined from early post-impoundment levels, while northern pikeminnow and peamouth chub numbers have substantially increased (Dalbey, et al.,1997). Kokanee salmon introduced to the reservoir in the 1970s have become abundant and self-sustaining due to exploitation of the niche provided by the reservoir environment. Genetically pure stocks of fluvial and ad fluvial west slope cutthroat trout occur in the headwaters of Lake Koocanusa.

3.3.1 ALTERNATIVE 1: NO ACTION

Under the “No Action” alternative, fish and wildlife would continue to thrive, at its existing state and process. The risk of an accident around the power lines, to the dam, or at a recreation site would remain high. If an accident did occur, fish and wildlife would be affected by habitat degradation either by fire or hydrocarbon spillage; and the similar effects to the fish and wildlife habitat would be similar as described in Alternative 1 “*No Action*” *sections 3.1 Water Quality and 3.2 Vegetation.* Eventually, if oil persisted in the habitat, then population structure, species abundance, diversity and distribution could shift to more tolerant populations (USFWS 2004). This may cause higher risk of damage and degradation of the environment if this alternative was selected.

3.3.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

With the agency preferred alternative, the added restriction zones around the operating projects and its recreation sites would ensure a lower probability of an accident at the power lines and infrastructure at CJD, AFD, and LD and their accompanying recreation sites. The restrictions under this alternative would reduce the risk of loss of life, property, and the probability of negatively impacting fish and wildlife and their habitat.

3.4 Federally Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973 (as amended), federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed and proposed threatened or endangered species. For species information such as life history, please go to website:

CJD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=53047

AFD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=16017

LD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=30053

TABLE 1: Federally listed Threatened and Endangered species in the project area:

Species	Agency Jurisdiction	Federal Listing	Year Listed	Occurrence (absent, unlikely, likely)- Corps Determination (NE,BE,NLAA, LAA, OR LAMCH*)		
				CJD	AFD	LD
Bull trout (*Salvelinus confluentus*)	USFWS	Threatened	1998	Unlikely-NE	Likely-NE	Likely-NE
		Critical Habitat Designated	2004	Unlikely-NE	NE	NE
White sturgeon (*Acipenser transmontanus*)	USFWS	Endangered	1994	-	-	Likely-NE
		Critical Habitat Designated	2001	-	-	NE
Canada lynx (*Lynx Canadensis*)	USFWS	Threatened	2000	Unlikely-NE	Unlikely-NE	Unlikely-NE
		Critical Habitat Designated	2006	-	-	Unlikely-NE
Grizzly bear (*Ursus arctos horribilis*)	USFWS	Threatened	1975	Unlikely-NE	Unlikely-NE	Unlikely-NE
Woodland caribou (*Rangifer tarandus caribou*)	USFWS	Endangered	1983	-	Unlikely-NE	-
		Critical Habitat Designated	2012	-	-	-
Showy stickseed (*Hackelia venusta*)	USFWS	Endangered	2002	Unlikely-NE	-	-
Ute ladies' tresses (*Spiranthes diluvialis*)	USFWS	Threatened	1992	Unlikely-NE	-	-
Spalding's catchfly (*Silene spauldingii*)	USFWS	Threatened	2001	Unlikely-NE	-	Unlikely-NE

*NE = No Effect; BE = Beneficial Effect; NLAA = Not Likely to Adversely Affect; LAA = Likely to Adversely Affect; LAMCH = Likely to Adversely Modify Critical Habitat; "–" = Not present

CJD. None of these species with the possible exception of bull trout are known or suspected to occur within the project vicinity due to species' specialized habitat requirements that are not present at the project site. Bull trout have been rarely found in the reservoir with only two fish captured and documented within the reservoir in the last 20 years (Beeman et al. 2003). These fish were likely entrained from Grand Coulee Dam and are not part of a reproducing population. There are no rearing or spawning tributaries to the reservoir that support bull trout (USFWS 2011) and no cool water refugia (<16˚ C) in the reservoir during summer and early fall with water temperatures typically exceeding avoidance levels (18˚ C) from August-October; temperatures in the shallow water near the project site are likely higher (Richards et al. 2011). As mentioned in Section 3.6, TDG spikes reaching 140 percent have been observed in Rufus Woods Lake as recently as 2011. Harm to fish from gas bubble trauma begins at TDG levels of 120 percent and mortality at levels above 130 percent. The rarity of bull trout and poor habitat quality in the project vicinity makes it unlikely they would be present in the project area.

AFD. None of these species with the exception of bull trout are known or suspected to occur within the project vicinity due to species' specialized habitat requirements that are not present at the project site. Lake Pend Oreille is part of the Lower Clark Fork Recovery subunit. Historically, Lake Pend Oreille is known to support bull trout and may have supported an estimated 10,000 or more adult bull trout (Pratt and Houston 1993). Red counts from 1996 to 2000, found 11 local populations in Lake Pend Oreille and

found an annual mean of 620 redds. These redds are found in the upper reaches of Lake Pend Oreille and not around the project vicinity (USFWS 2002). Though AFD does not have a fish passage structure, bull trout are found downstream of the dam and believed to be entrained through the dam (pers comm. Maroney, Kalispel Tribe 2010). It is likely that bull trout occur in the project vicinity.

LD. None of these species with the exception of bull trout are known or suspected to occur within the project vicinity due to species' specialized habitat requirements that are not present at the project site. Lake Koocanusa is part of the Kootenai River Basin critical habitat subunit and considered an essential habitat. Lake Koocanusa supports a large population of bull trout (over 10,000 adults) which occur in the lake and in the upper reaches of the basin, particularly the upper Kootenay River watershed in British Columbia for spawning and rearing. The Wigwam River in British Columbia which wraps back into the United States provides a small portion of the spawning and rearing habitat. According to USFWS (2010), Lake Koocanusa, it *"is amongst the most secure and stable bull trout refugium across the range of the species and may provide a very important stronghold against potential extinction. The adfluvial population that is the sole life history form present in the CHSU originated from fluvial stocks in the Kootenai River trapped upstream of Libby Dam, which successfully adapted to the newly expanded habitat and have provided a strong and resilient core area population".* Thus, it is likely that bull trout occur in the project vicinity.

3.4.1 Alternative 1: No Action

Under the "No Action" alternative, federally threatened and endangered species would continue to thrive, at their existing state and process. There would still be a potential for risk to life, property, and the environment from unrestricted seaplane use. The risk of an accident around the power lines, the dam, and at recreation facilities is high. If an accident did occur around the power lines, to the dam, or at a recreation site, federally listed threatened and endangered species could be affected adversely by habitat degradation. The effects to the fish and wildlife habitat would be similar as described in Alternative 1 "*No Action*" *sections 3.1 Water Quality and 3.2 Vegetation.*

3.4.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

With the agency preferred alternative, the added restriction zones around the operating projects and their recreation sites would reduce the probability of an accident occurring at the power lines and infrastructure at CJD, AFD, and LD thus lessen the risk of impacts to the habitat of listed species in the area.

3.5 Cultural Resources

The Corps has coordinated its review for the National Environmental Policy Act with its responsibilities under Section 106 of the National Historic Preservation Act (NHPA). Seaplane operations in general could have the potential to effect historic properties. Auditory or visual intrusion of a seaplane in flight or taxiing on water could affect historic properties where setting, association and feeling are essential aspects of integrity, especially properties which may be significant for their traditional cultural or religious values. There also is a minor risk that a seaplane accident could cause physical damage to historic buildings, structures, or archaeological sites. Impacts to cultural resources are typically examined in terms of how the project would affect the characteristics that make the property eligible for the National Register of Historic Places (NRHP). For instance archaeological sites that are eligible under Criterion D of the NRHP for their information values could be impacted by ground disturbance. Meanwhile, a property that is eligible for associative values under Criterion A, B or C of the NRHP, such as a farmhouse or property of religious or cultural significance, could be impacted by the introduction of audible or visual intrusions because these intrusions may affect the integrity of location, setting, and feeling. Such impacts

are referred to as adverse effects in the NHPA's implementing regulations (36CFR800.5). The phrase "adverse effect" (used in the NHPA) and "significant impact" (used in the National Environmental Policy Act (NEPA)) are not equivalent terms but are similar in concept.

3.5.1 Alternative 1: No Action

Under the no action alternative, seaplane operations would continue without specified restrictions at CJD, AFD, and LD. There would be no change in current management condition for cultural resources. Adverse effects to historic properties, where identified, would continue to be managed pursuant to Section 110 and 106 of the NHPA.

3.5.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

The Corps has reviewed the agency preferred alternative to comply with Section 106 of the National Historic Preservation Act (NHPA). As provided at 36 C.F.R. § 800.3(a)(1) of the regulations implementing Section 106, the Corps has determined that the proposed Federal action is an undertaking, but is the type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present. The Corps has determined that placing restrictions on an existing and authorized activity is an administrative action that has no bearing on the existing cultural resources environment, conditions, or management. Under the agency preferred alternative, seaplane operations would continue but with restriction at CJD, AFD, and LD. There would be no change to the current management regime for cultural resources as generally described above or for the no action alternative. Adverse effects to historic properties, where identified, would continue to be managed pursuant to Section 110 and 106 of the NHPA.

Since the proposed policy only places restrictions on an existing and authorized activity, there is no essential change in the current environment, conditions, or management. The proposed policy does have the potential to have an overall beneficial effect by reducing the likelihood of any potential accident and creating restricted activity zones around the lake shores for seaplane operations which could reduce the potential for audio and visual instructions. Similarly, the buffer zone for seaplane flights around the dams, powerhouse, power lines and other infrastructure could reduce the potential for physical damage. The ability to measure impacts though would be speculative in nature as it is not known how many seaplanes will be flying to the sites in the future. The most that can be stated, however, would be that the policy restrictions provide better protection and avoidance of potential impacts to cultural resources than no seaplane restrictions as is the case with the current management regime.

3.6 Air Quality and Noise

CJD. In accordance with the Clean Air Act and its amendments, National Ambient Air Quality Standards (NAAQS) have been established by the U.S. Environmental Protection Agency (EPA) for several criteria pollutants: lead, ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, total suspended particulates (TSP), and particulates with aerodynamic diameters of 10 micrometers or less (PM_{10}) and 2.5 micrometers or less ($PM_{2.5}$). In the State of Washington, the state agency managing the air quality, Department of Ecology (Ecology), is the designated non-Federal Agency to implement and set air quality standards in Washington under the Clean Air Act. Presently, air quality at CJD presently meets standards as set forth by Ecology. The project area has been classified as an attainment area for all criteria pollutants.

Sources of noise within the project area include the daily activities of the operation of the dam, vehicles traveling on Columbia River Road and watercraft operating on Rufus Woods Lake. Both vehicle and

watercraft activity in the area is low. No residents or other sensitive receivers are nearby; the nearest resident is approximately 0.75 miles southeast.

AFD. In the State of Idaho (ID), the state agency managing the air quality, the Department of Environmental Quality (DEQ), as the designated non-Federal agency to implement and set air quality standards in Idaho under the Clean Air Act. Air quality at AFD meets the standards as set forth by IDEQ. The project area has been classified as an attainment area for all criteria pollutants.

Similar to CJD, sources of noise within the project area include the daily activities of the operation of the dam, vehicle and watercraft operating on Lake Pend Oreille to and from the operating area and recreation area. Other noise is typical of a semi-rural area with a railroad, located across the river from AFD and along the north shore of Lake Pend Oreille, upstream of AFD. Recreational powerboats, especially during summer months, are another source of noise.

LD. In the State of Montana (MT), the state agency managing the air quality, Department of Environmental Quality (DEQ), is the designated non-Federal Agency to implement and set air quality standards in MT under the Clean Air Act. For the area around the city of Libby, two non-attainment areas have been designated, but neither includes Libby Dam or Lake Koocanusa. In 2009, EPA released news that Libby met the federal air quality standards since the release of the NAAQS standards.

Noise levels are consistent with "natural wilderness" conditions. Aside from occasional recreational boat motors, vehicle traffic, day use visitors, or maintenance equipment (such as lawn mowers) human-caused noise disturbance is minimal.

3.6.1 Alternative 1: No Action

Under the "No Action" alternative, the air quality and noise from the operation areas and recreation sites associated with Corps would continue at its current condition.

3.6.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

With the agency preferred alternative, conditions in the areas bordering the restriction zones would be similar to the "No Action" alternative, with the existing air quality and noise from the operation areas and recreation sites remaining at its current state. Within the restriction zones, the reduction in air traffic and reduced potential for accidents with the preferred alternative would provide an improvement to the air quality and noise.

3.7 Land Use and Aesthetics

CJD. The land along Rufus Woods Lake and the Columbia River downstream of CJD is sparsely developed. The town of Bridgeport immediately downstream is the extent of the development near CJD. Rufus Woods Lake borders Okanagan County in the north and Douglas County in the south; and the majority of the land use is classified as agriculture or open space (Ecology, 2011). The land managed by the Corps along Rufus Woods Lake is used as operational area, recreational areas, or mitigation sites. Some of the recreational areas upstream of the dam are part of the CJD mitigation sites and compromise 21 sites along the shoreline of Rufus Woods Lake.

The shoreline is steep with a mix of sandy gravel and cobble. The surrounding landscape is dominated by sagebrush and other high desert vegetation.

AFD. The land managed by the Corps at Lake Pend Oreille and Pend Oreille River will continue to be used as either an operational area or a recreational area. The surrounding area consists of mixed rural uses including residential, agricultural activities and small communities.

LD. Similar to CJD and AFD, the land managed by the Corps at Lake Koocanusa and Kootenai River will be used as either operational area or recreational areas. Land around Lake Koocanusa primarily consists of coniferous forest, most of which is managed and maintained by the U.S. Forest Service (USFS). Private forests managed for merchantable timber are also extensive in the area. Most of the land parcels managed by the Corps for mixed use are surrounded by USFS land. A few residential homes and commercial businesses are scattered along the Kootenai River downstream of the dam near the town of Libby.

The Corps owns, operates, and maintains Libby Dam and several hundred acres of associated service roads, campgrounds, and recreation areas in the immediate dam vicinity. The view is mostly coniferous forest or water view of Lake Koocanusa or the Kootenai River.

3.7.1 Alternative 1: No Action

Under the "No Action" alternative, the land use and management of operation areas and recreation sites associated with Corps would continue as well as the management of mitigation sites at CJD. The existing aesthetics of the operating infrastructure and power lines would not change from the current condition.

3.7.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplane Landings)

With the agency preferred alternative, the added restriction zones around the operating projects and its recreation sites would be similar to the "No Action" alternative. The land use and management of operation areas and recreation sites associated with Corps would continue as well as the management of mitigation sites at CJD. The existing aesthetics of the operating infrastructure and power lines would not change.

3.8 Recreation

CJD. Recreation is an important industry for the local community and county governments. Numerous recreational opportunities exist in and around the lake, including picnicking, hiking, boating, hunting, fishing, swimming, and camping along Rufus Woods Lake. Thirteen recreation areas are managed by CJD recreation staff. Brandt's Landing, the Debris basin, Information & Rest Area, Rocky Flats, and Spillway viewpoint have picnic areas only, while the Commons, Foster Creek, Lower spillway, North Viewpoint, and Willow Flats offers group picnic with shelters. Some of the recreation areas have multipurpose or interpretive hiking trails and playgrounds. Willow Flats is the only one that has a boat ramp and fish facilities. There are two campgrounds near Chief Joseph Dam that are not managed by the Corps which have numerous amenities such a showers, boat ramps, playgrounds, swimming area, and trails: Marina Park in Bridgeport and Bridgeport State Park on the north shore of the lake.

Rufus Woods Lake is a favorite spot for anglers from all over the region. Walleye, rainbow trout, and triploid trout are the major game fish caught in the lake.

AFD. Similar to CJD, recreation is an important industry for the local community and county governments. Lake Pend Oreille and the Pend Oreille River are recreation destinations for boaters, fishers, hunters, and other recreationists on a year-round basis. Warm weather options include a variety of activities such as boating, fishing, swimming, and kayaking. Based on an IDFG survey in 2003, Lake Pend Oreille was the most popular destination for fishing trips in Bonner County, with 60,297 trips and

expenditures of $17.8 million (2003 dollars) (Grunder et al. 2008). Average spending per trip was $295. Cool weather activities include ice fishing, ice skating, and various hunting activities. Popular ice fishing spots are located at various locations around the lake including a spot north of Sandpoint and another near Sunnyside (Brady 2010). Approximately 100 to 200 fishermen will gather near Sandpoint to participate in ice fishing. Waterfowl hunting on and near Lake Pend Oreille and the Pend Oreille River is popular in the fall.

Nine recreation sites are managed by AFD recreation staff, including four developed campgrounds/day-use areas, two day-use only areas, and three primitive access areas. Albeni Cove, Priest River, Riley Creek, and Springy Point have developed campsites (no hookups, except at Riley Creek) with a variety of day-use facilities. The Visitor Center and Trestle Creek are day-use areas only. Morton Slough, Johnson Creek and the Drift yard (managed by the Idaho Department of Fish and Game) offer primitive camping and boat launch facilities.

LD. Year-round outdoor recreation is a primary attraction for locals and visitors alike. The Corps maintains boat ramps allowing access to both Lake Koocanusa and the Kootenai River. Hiking, fishing, hunting, skiing, snowmobiling, and camping are all common activities in the area. Specifically, LD is the only operating site that offers disc golf on the Kooky Noosa Course. There are four primitive campgrounds managed by LD staff: Alexander Creek, Blackwell Flats, Downriver, and Dunn Creek campgrounds. All except Alexander Creek have campsites, boat ramps, and launching facilities.

The Souse Gulch Recreation Area with the disc golf course is currently a day-use area including swimming, picnic shelters, boat ramp and dock; and is currently being planned for construction in the next five years for 30 campsites with full utility hookups, a 4-stall shower house, a gatehouse, 2 attendant campsites, a dock facility, and a dump station.

3.8.1 Alternative 1: No Action

Under the “No Action” alternative, recreation activities would continue and the demand to accommodate more recreation would increase. There would be a potential risk to life, property, and the environment around the operating projects from unrestricted seaplane use. The risk of an accident around the power lines, dam, and recreation sites is high. If an accident did occur, public safety would be a concern and recreation activities may be affected by temporarily closing a section of the affected area to swimming, fishing, and camping until the water conditions are safe.

3.8.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplanes Landings)

With the agency preferred alternative, the potential for accidents to occur to recreationalists utilizing the recreational sites would be reduced compared to Alternative 1.

3.9 Global Climate Change

CJD, AFD, and LD are located in the Northwest Region of the U.S. The Northwest is bordered by the Pacific Ocean to the west and Canada to the north. The Cascade Mountain Range runs north-south through Washington and Oregon, splitting the region. The climate west of the mountains, temperatures are mild year-round (temperatures below freezing or above 90°F are relatively rare), winters are wet, and summers are dry. East of the mountains, it’s typically sunnier and drier over year around, winters are colder, and summers can be significantly hotter (EPA 2013 and USFWS 2011)

According to the United States Global Change Research Program (USGCRP) (2009) report, the climate of the Northwest is changing. The average annual temperature increased by 1.5°F over the last century,

with increases in some areas up to 4°F. Snowpack, stream flows, and forest cover are already changing and are expected to be influenced in the future climate, where the average annual temperature in the region is projected to increase by 3-10°F by the end of the century. Precipitation in the winter is projected to increase while precipitation in the summer is projected to decrease.

3.9.1 Alternative 1: No Action

Under the "No Action" alternative, the global climate change trends would not change from current condition.

3.9.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplanes Landings)

Since the area of restrictions in all three projects is relatively small compared to the whole region of the Northwest, global climate change trends would not change.

3.10 Local Economy/Socioeconomics

CJD. The majority of the CJD infrastructure (Powerhouse) is located in Douglas County and the Spillway on Okanagan County, Washington. Bridgeport is the town closest to CJD with a population of 2,409, growing at 17% from 2000 through 2010 (U.S. Census Bureau 2010). Within the project area (Appendix B), the population is 577 with 49% white, 2% American Indian, 1% Pacific Islander, and the rest Hispanic. The percentage of the population in the project area with incomes below poverty level is 17%. Agriculture is the main source of income in the project vicinity followed by revenues from tourist and recreational sports (e.g., fishing and hunting).

AFD. AFD is located in Bonner County, Idaho. The incorporated communities of Sandpoint, Pend Oreille, Kootenai, Hope, and Clark Fork are located adjacent to the lake. Priest River is located along the Pend Oreille River upstream of AFD. Sandpoint is the largest city in Bonner County with a 2010 population of 7,365, growing at 0.8% annually from 2000 through 2010 (U.S. Census Bureau 2010). Bonner County's population was 40,877 in 2010. The County grew by 1.1% annually from 2000 through 2010. The other incorporated communities' populations for 2010 were Ponderay with 1,137 residents, Kootenai with 678 residents, Hope with 86 residents, and Clark Fork with 536 residents. As of the 2000 census (US Census Bureau 2010), nonwhites made up 3.4 percent of the total population of Bonner County, and the percentage of residents with incomes below poverty level was 12.4 percent. The project is not located within a city limits (Appendix C) but is a very important part of the Bonner County government and financial structure. Tourism and seasonal residents plus recreational sports (e.g., fishing, hunting, and skiing), are somewhat impacted by the daily operation of the Albeni Falls Project.

LD. LD is located in Lincoln County, Montana. (Appendix D). The closest town to the project area is Libby with a population of 2,628, 1,252 households, and 647 families growing at 0.1% annually from 2000 through 2010 with the racial makeup of 95.9% White, 0.1% African America, 1.1% Native American, 0.4% Asian, .03% from other races, 2.1% from two or more races, and Hispanic 2.5% of the population (U.S. Census Bureau 2010). The percentage of the population with incomes below poverty level is 24%.

However, tourism has become a major role in the local economy such as LD tours and recreational sports (e.g., hunting and fishing). The local residents are mostly employed by government agencies such as the US Army Corps of Engineers, Forest Service, MT Fish, Wildlife and Parks, etc.

3.10.1 Alternative 1: No Action

Under the “No Action” alternative, seaplane operators would have unspecified access around the power lines, operating dam, and recreation sites at CJD, AFD, and LD. The local economy and socioeconomics would continue at its current rate and condition.

3.10.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplanes Landings)

With the agency preferred alternative, the added restriction zones around the operating projects and its recreation sites would reduce the probability of an accident occurring at CJD, AFD, and LD thus lessen the risk of loss of life, property, and impacts to the environment. There would be less public safety concern for recreationalists, Corps staff and operating project managers. Since most of the tourists visiting LD and recreationalists visiting the project areas are local hunters and fishermen, it is unlikely the economy from tourism and recreation would be negatively impacted from restricting seaplane operations around the operating projects and recreation sites. A positive impact may result from publication of a district policy clarifying how seaplane operators may use the recreation sites.

3.11 Public Safety

3.11.1 Alternative 1: No Action

Under the “No Action” alternative, public safety would continue to be a concern. There would still be a potential for risk to life, property, and the environment from unrestricted seaplane use. The risk of an accident around the power lines, the dam, and at recreation facilities is high. If an accident did occur around the power lines, the dam, or a recreation site, there is a potential that employees, visitors and, recreationalists may be injured or die.

3.11.2 Alternative 2: Agency Preferred Alternative (Restrictions on Seaplanes Landings)

With the agency preferred alternative, the added restriction zones around the operating projects and their recreation sites would reduce the probability of an accident occurring at the power lines, other infrastructure, and recreation sites at CJD, AFD, and LD, thus lessening the risk of injury or death from a potential accident.

4 Mitigation

Appropriate mitigation measures for adverse impacts of a proposed action must be addressed per NEPA requirements. In general, mitigation can take the following forms (40 CFR 1508.20):

a. Avoiding the impact altogether by not taking a certain action or parts of an action.
b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
e. Compensating for the impact by replacing or providing substitute resources or environments.

The preferred alternative, the added restriction zones around the operating projects and its recreation sites, would reduce the probability of an accident occurring at CJD, AFD, and LD, thus reducing the risk of loss of life, property, and impacts to the environment particularly the habitat of listed species in the area. The list of restrictions minimizes and reduces impact to the environment that is presently being damaged by the lack of seaplane policy. In addition, since seaplanes follow U.S. Coast Guard marine

regulations when operating on water, the Corps expects seaplane operators to follow the additional provisions in the U.S. Coast Guard Invasive Species Guidelines for recreational activities on seaplanes (USCG-200-7206) (Appendix B). These guidelines are considered additional Best Management Practices (BMPs) that helps control the spread of zebra mussels and other aquatic nuisance species that could become attached to seaplanes during taxing, storage or moorage, landing, and take-off procedures.

5 COORDINATION

The following agencies and entities have been consulted during the preparation of this EA:

- National Marine Fisheries Service
- U.S. Fish and Wildlife Service
- Environmental Protection Agency
- U.S. Coast Guard
- Federal Aviation Administration
- Seaplane Pilots Association
- Washington Department of Fish and Wildlife
- Idaho Fish and Game
- Montana Fish, Wildlife, and Parks
- Washington State Office of Archaeology and Historic Preservation
- Idaho State Office of Archaeology and Historic Preservation
- Montana State Office of Archaeology and Historic Preservation
- Washington Department of Ecology
- Idaho Department of Water Quality
- Montana Department of Environmental Quality

A Draft Environmental Assessment was issued for public review and comments on September 16, 2015, and concluded on October 16, 2015. No public comments were received by the Corps during the review period.

6 CUMULATIVE EFFECTS

The NEPA defines cumulative effects as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.7).

In addition to ongoing operations of the Federal projects themselves, all three projects have three common types of activities that are and will be occurring in their project area. These types of activities are herbicide application to control invasive species; boat ramp and dock repair; bank stabilization; and operation and maintenance of the projects themselves. All of these have a certain degree of impact to the environment. Since the preferred alternative adds restriction zones around the operating projects and its recreation sites, potentially minimizing accidents, it is expected that the cumulative effects to the environment would not result in additional impacts beyond the reasonably foreseeable activities described above.

7 ENVIRONMENTAL COMPLIANCE

This chapter describes how the recommended policy complies with all of the pertinent environmental laws, Executive Orders, and agency policy/guidance. Since the policy does not have activities associated

with or that would impact with certain environmental laws, executive orders, and or agency policy/guidance, the following will not be addressed in this document: Indian Treaty Rights Act; Coastal Zone Management Act; Marine Protection, Research, and Sanctuaries Act; Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act.

7.1 National Environmental Policy Act (NEPA)

In accordance with the NEPA (42 U.S.C. § 4321 et seq.), Federal agencies are required to evaluate and disclose the potential environmental effects of their proposed major Federal actions and to solicit public comment. This Environmental Assessment (EA), dated October 2015, is NEPA compliance for the proposed project. As required by NEPA, this EA describes existing environmental conditions at the project site, the proposed action and alternatives, potential environmental impacts of the proposed project, and measures to minimize environmental impacts. No comments were received during the 30 day public comment period from September 16, 2015, to October 16, 2015.

7.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. §§ 703–712) is a Federal law that carries out the United States' commitment to four international conventions with Canada, Japan, Mexico and Russia. Those conventions protect birds that migrate across international borders. MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests except as authorized under a valid permit (50 CFR 21.11) where take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb; and activities include directly or indirectly lead to take. This law requires Federal Agencies to coordinate with and seek advice and recommendation from U.S. Fish and Wildlife Service (USFWS) prior to engaging such activities.

The Corps contacted USFWS in June 2014, to seek advice and recommendations on the proposed action. Based on several phone conversations, the preferred alternative (restricting seaplane landings) at CJD, AFD, and LD complies with the MBTA and no further action is needed.

7.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d) provides the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of or the parts, nests, or eggs of such birds without prior authorization. This includes inactive nests as well as active nests, where take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb; and activities include directly or indirectly lead to take. This law requires Federal Agencies to coordinate with and seek advice and recommendation from U.S. Fish and Wildlife Service prior to engaging such activities.

The Corps contacted USFWS in June 2014, to seek advice and recommendations on the proposed action. Based on several conversations, the preferred alternative (restricting seaplane landings) at CJD, AFD, and LD would not violate the Bald and Golden Eagle Protection Act and no further action is needed.

7.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects during the planning and feasibility phase.

The Corps contacted USFWS in June 2014, to seek advice and recommendations on the proposed action. Based on several phone conversations, USFWS finds that no further coordination is needed for this project since the preferred alternative would have either a no effect or beneficial effect to fish and wildlife species and their habitat.

7.5 Endangered Species Act

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, (16 U.S.C. §§ 1531-1544) federally funded, constructed, permitted, or licensed projects must take into consideration effects to federally listed or proposed threatened or endangered species. Based on our analysis, the Corps finds that the restrictions listed in the Seaplane Operations Policy would have no effect to federal listed species or their designated critical habitat near CJD, AFD, and LD (Table 1) because the proposed restrictions would reduce the potential of accidents in the project area, which would result in environmental impacts (e.g., water quality and, vegetation); and limiting the taxiing speed and providing landing/taking-off zones around Corps recreation fee sites would reduce the rate of habitat degradation at the recreation sites.

7.6 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (16 USC 470) requires Federal agencies to take into account the effects of proposed federal undertakings historic properties included or eligible for the National Register of Historic Places. The implementing regulations for Section 106 (36 C.F.R. § 800) require Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and Indian tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties. The Corps finds that the Seaplane Operation Policy has no potential to cause adverse effects to historic properties (Appendix F).

7.7 Clean Air Act

Section 176 of the Clean Air Act, 42 U S C § 7506(c), prohibits Federal agencies from engaging in any activity that does not conform to an approved state or Federal implementation plan in a non-attainment or maintenance area. The policy restricts access to areas of CJD, AFD, and LD, does not generate any emissions, and is therefore exempt from any conformity requirements of the Clean Air Act.

7.8 Clean Water Act

The Clean Water Act (33 U.S.C. § 1252 et seq.) and its regulations require Federal agencies to prevent, reduce or eliminate pollution of waters of the United States. The regulations implementing the Act disallow the placement of dredged or fill material into waters of the U.S., unless no other less environmentally damaging practicable alternative is available. Section 402 of the Act requires a National Pollutant Discharge Elimination System (NPDES) permit and the associated implementing regulations for General Permit for Discharges from large and small construction activities for construction disturbances over one acre. This project would not have land disturbance; therefore, a NPDES permit is not required. No other sections of the Clean Water Act apply to the proposed action, thus, the Corps finds that the Seaplane Operation Policy complies with the Clean Water Act.

7.9 Executive Order 11988, Floodplain Management

Executive Order 11988 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy of the floodplain development where there is a practicable alternative. In accomplishing this objective, “each agency shall provide leadership and shall

take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains." The proposed action of the policy would not create a change that would affect occupancy of the floodplain.

7.10 Executive Order 11990, Protection of Wetlands

Executive Order 11990 requires Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. In carrying out the activities, "each agency shall consider factors relevant to a proposal's effect on the survival and quality of the wetlands. Among these factors are: (a) public health, safety, and welfare, including water supply, quality, recharge and discharge; pollution; flood and storm hazards; and sediment and erosion; (b) maintenance of natural systems, including conservation and long term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and (c) other uses of wetlands in the public interest, including recreational, scientific, and cultural uses". The proposed action of the policy would not create a change that would affect the destruction, loss or degradation of wetlands and would in fact reduce the likelihood of any accidents that might affect wetland resources.

7.11 Executive Order 12898, Environmental Justice

Executive Order 12898 directs every Federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations. The proposed action would not exclude, deny benefits to, or discriminate against minority or low-income populations, nor does the project involve locating a facility that will discharge pollutants or contaminants. The project would not have any disproportionately high human health impacts or environmental effects and therefore would not impact any environmental justice communities.

8 Conclusion

Based on the above analysis, this project is not a major Federal action significantly affecting the quality of the human or natural environment, and therefore does not require preparation of an environmental impact statement. A signed FONSI will complete this environmental review.

9 REFERENCES

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APPENDIX A

Seattle District, U.S. Army Corps of Engineers
Seaplane Operation Policy

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Project Operations
Regulations of Seaplane Operations
Civil Works Water Resource Development Projects
Administered by
Seattle District
U.S. Army Corps of Engineers

1. REFERENCE: Title 36 Code of Federal Regulations (CFR) Part 238, Regulation of Seaplane Operations at Civil Works Water Resource Development Projects Administered by the Chief of Engineers (42 FR 220, 15 November 1977).

2. PURPOSE: This policy is in response to an increase in public interest expressed by private seaplane operators who desire to land their personal aircraft on waters held in fee inside the boundaries that make up the Seattle District. Restrictions and guidelines for landing and takeoffs will apply to Lake Pend Oreille (Albeni Falls Dam) in Idaho, Lake Koocanusa (Libby Dam) in Montana and Rufus Woods Lake (Chief Joseph Dam) in Central Washington. Landing and takeoffs are prohibited at Mud Mountain Dam (White River), Lake Washington Ship Canal and on the (Eagle River Gorge) Howard Hansen Dam.

3. SCOPE: This new policy is for the purpose of defining the rules which in conjunction with Title 36, Chapter III Section 36 CFR 327.4 and 36 CFR 328 govern the operation of seaplanes upon waters classified or zoned as 'Fee Simple' by the Federal Government within Seattle District. All appropriate State and Federal aviation laws apply to aircraft operations upon or over project lands and waters.

4. DEFINITIONS: A seaplane is an aircraft registered with the Federal Aviation Administration and equipped with pontoons for the purpose of landing on or taking off from water. After landing on the water seaplanes are considered marine vessels and must adhere to the rules and regulations described under the provisions of Coast Guard Rule 18 (d) and Federal Aviation Regulation 91.115. On the water all seaplanes and their operators shall keep well clear of all vessels and avoid impeding their navigation.

5. AUTHORITY BY INDIVIDUAL PROJECT:

a. Albeni Falls Dam and reservoir, authorized by Public Law 81-516 (81st Cong, 2nd Sess.) and the Flood Control Act of 1950. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoffs and landings are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure including 500 feet from the shore lines at Riley Creek, Priest River, Albeni Cove, Springy Point and Trestle Creek recreation areas. In an emergency situation pilots may land inside the 500 foot buffer. Sea planes are prohibited from mooring to any public courtesy boat dock. Reference Appendix A.

b. Chief Joseph Dam and reservoir, authorized by Public Law 82-469 (82nd Cong, 2nd Sess.), July 9, 1952. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset on Rufus Woods Lake. Takeoff and landing maneuvers are prohibited ½ mile from Chief Joseph Dam and the Powerhouse. Pilots are to remain 500 feet from all terrestrial and floating structures, trash booms, buildings, ports, bridges, towers and utility lines. Pilots may land and take off 300 feet from the shores that make up Rufus Woods Lake. Reference Appendix B.

c. Libby Dam and reservoir, authorized by Public Law 81-516 (81st Cong, 2nd Sess.) and the Flood Control Act of 1950. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing maneuvers are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure. Pilots may land and take off 300 feet from the shores of Lake Koocanusa in waters of the United States. Reference Appendix C.

6. DISTRICT PROHIBITIONS AND RESTRICTIONS.

a. Pilots are responsible for knowing the rules and regulations pertaining to aircraft as set forth in the 36 CFR 327.4 and CFR 328 U.S. Army Corps of Engineers Title 36, Chapter III, Section 327.4 and Title 36 Code of Federal Regulations, Part 328 dated 15 November 1977. Copies are available from any Corps of Engineers Lake Office or by writing the Public Affairs Office at 4735 East Marginal Way South, Seattle, Washington 98134-2385.

b. Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset.

c. Where not specifically restricted or prohibited, operating recreational seaplanes are allowed seven days a week.

d. Commercial seaplane operations are prohibited unless authorized by the District Engineer in writing.

e. No landings or take offs are permitted inside no-wake areas.

f. On the water all seaplanes must be in conformance with U.S. Coast Guard boating safety requirements (Coast Guard Pamphlet CG-290; 46 CFR parts 25, 30; and 33 CFR part 175).

g. Operation of seaplanes is limited to recreational purposes only.

h. The operator must remain in the vicinity of the seaplane and be reasonably available to relocate the seaplane if necessary. Planes left unattended longer than 24 hours will be presumed to have been abandoned and may be impounded.

i. Seaplane landings and take offs on Lake Pend Oreille, Rufus Woods Lake or Lake Koocanusa are at the risk of the plane's owner, operator, and passenger(s). These lakes are operated as flood control/hydropower reservoirs with fluctuating pool elevations. Pilots are encouraged to contact Lake Project office(s) prior to flying for current lake elevations, cross winds and hazards including drift and storm debris.

j. There are no mooring facilities for seaplanes. Pilots may moor their personal aircraft on shorelines open to the general public. Tying off to trees is prohibited. When approaching shorelines to moor the taxi speed is restricted to 5 mph.

k. Prior to using any designated public boat launching ramp, the seaplane operator must have written permission from the Operations Project Manager or the District Engineer. This includes all nautical seaplanes or planes with retractable landing gear.

7. TAKE-OFFS AND LANDING RESTRICTIONS

a. Within 500 feet of all terrestrial and floating structures, i.e., ports, buildings, bridges, towers, utility lines, substations, buoys and docks.

b. Within ½ mile of Chief Joseph Dam on Rufus Woods Lake.

c. Within 500 feet of Libby Dam on Lake Koocanusa.

d. Bonner County Ordnance 3-601 restricts that area of the Pend Oreille River extending from Albeni Falls Dam downriver to a distance of one thousand feet (1000') and that area of the Pend Oreille River extending from Albeni Falls Dam upriver to a line fifty feet (50') upriver of the Burlington Northern-Santa Fe railroad Bridge (bridge number 249).

e. On Rufus Woods Lake in Washington and Lake Koocanusa in Montana pilots must remain at least 300 feet from all Corps of Engineer recreational areas, including marinas, boat launches, and swim beaches.

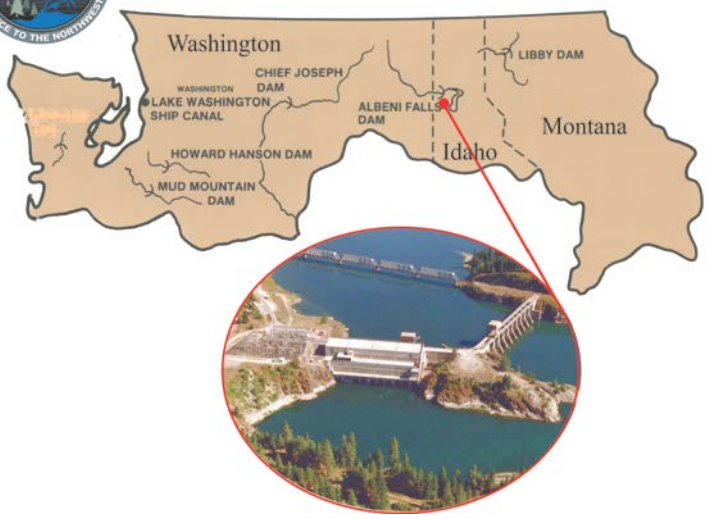
f. On Lake Pend Oreille in Idaho planes must remain 500 feet from shorelines bordering recreation areas when landing.

g. Landing a seaplane within 100 feet of a vessel, water skier, swimmer, or scuba diver is prohibited at Lake Pend Oreille, Rufus Woods Lake and Lake Koocanusa.

h. Seaplanes are prohibited from landing at Mud Mountain Dam (White River), Howard Hanson Dam (Eagle Gorge Reservoir) and Lake Washington Ship Canal.

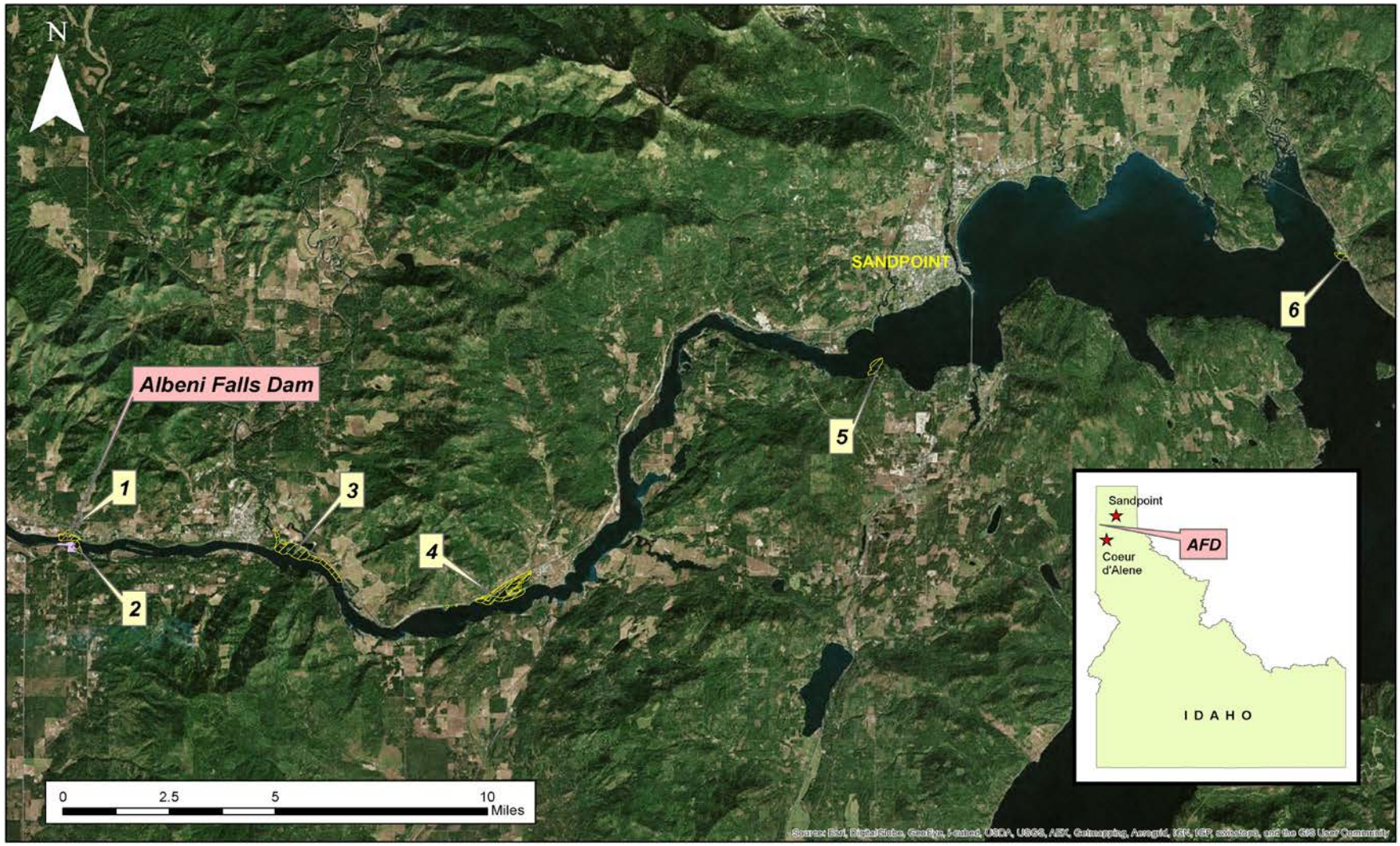
APPENDIX A

Albeni Falls Dam
(Lake Pend Oreille)

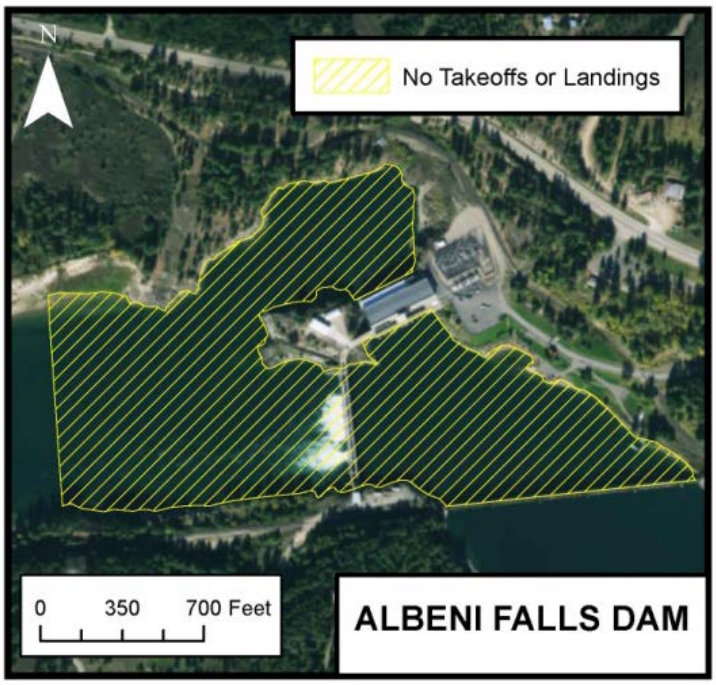


Albeni Falls Dam
2376 East Highway 2
Oldtown, ID 83822
Phone: 208-437-3133

Albeni Falls Dam and the location of recreation areas managed by the US Army Corps of Engineers.



Albeni Falls Dam and Lake Pend Oreille restricted areas for seaplane operations at the Corps Recreation Sites (Pink filled areas) and Wildlife Management Areas.



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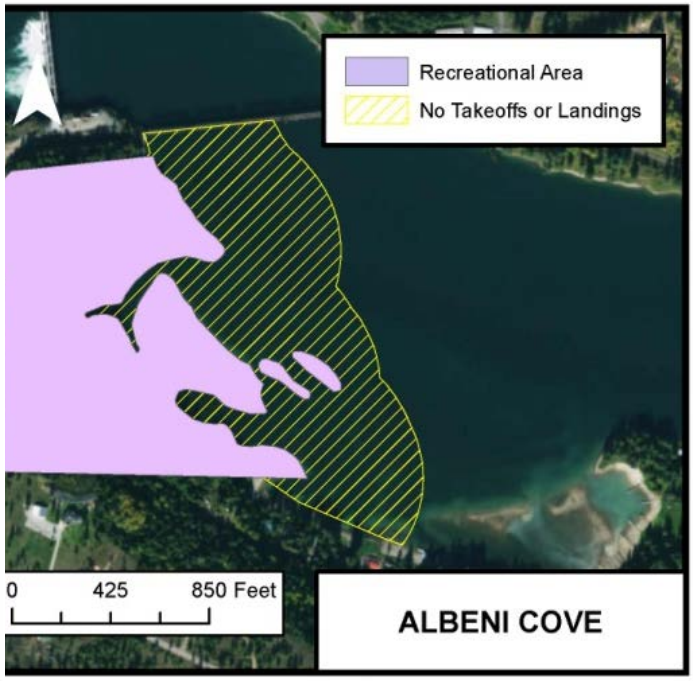

(2)

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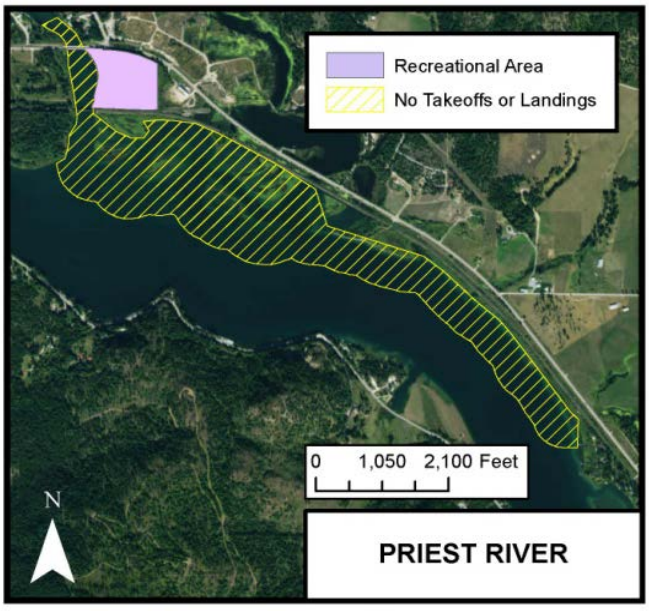

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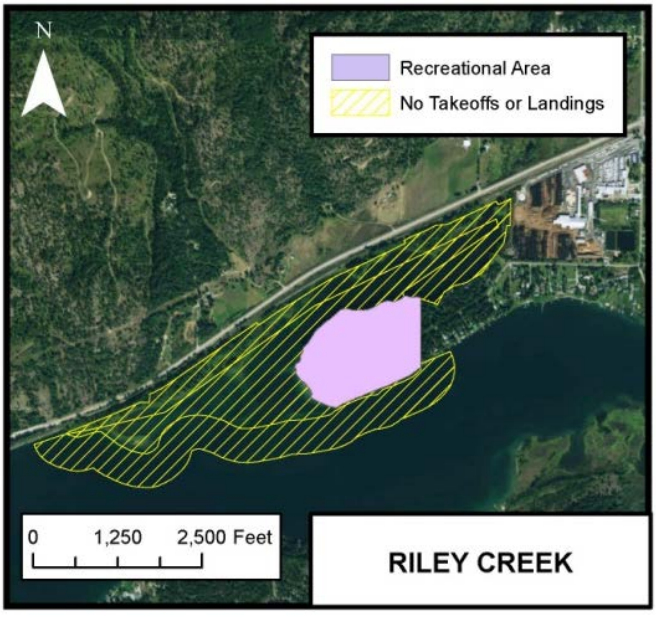

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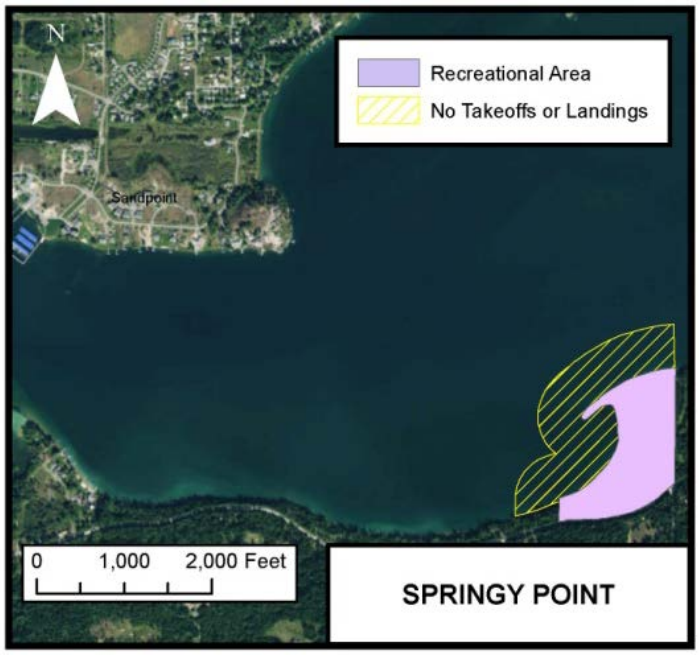
Albeni Falls Dam and Lake Pend Oreille restricted areas for seaplane operations at the Corps Recreation Sites (Pink filled areas) and Wildlife Management Areas.



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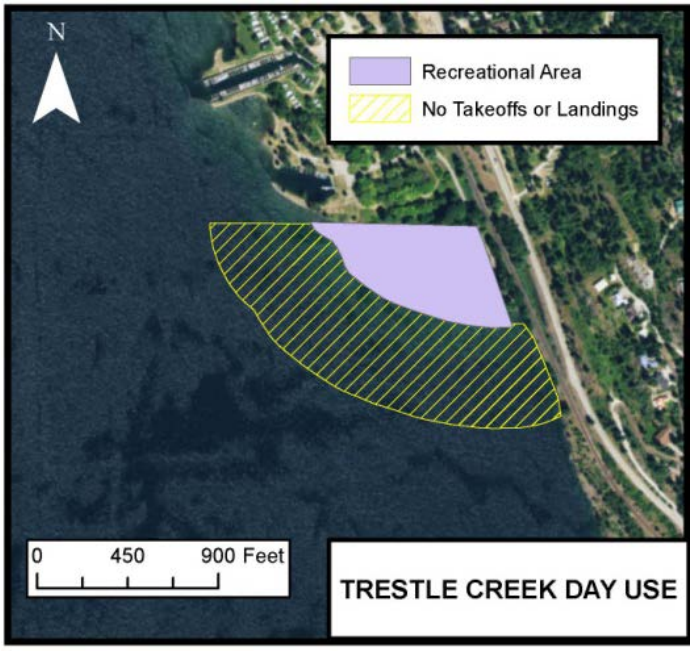
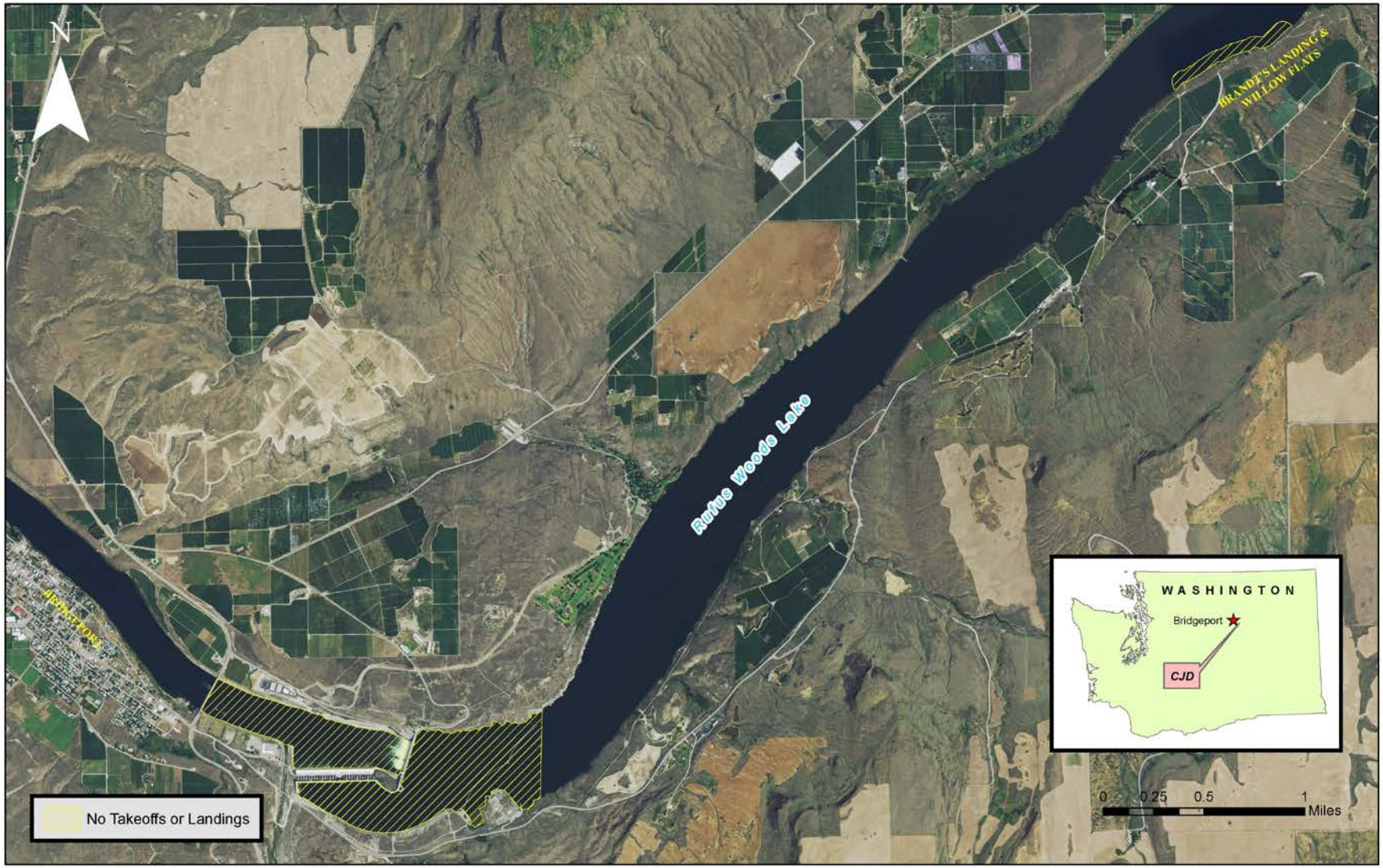


(6)

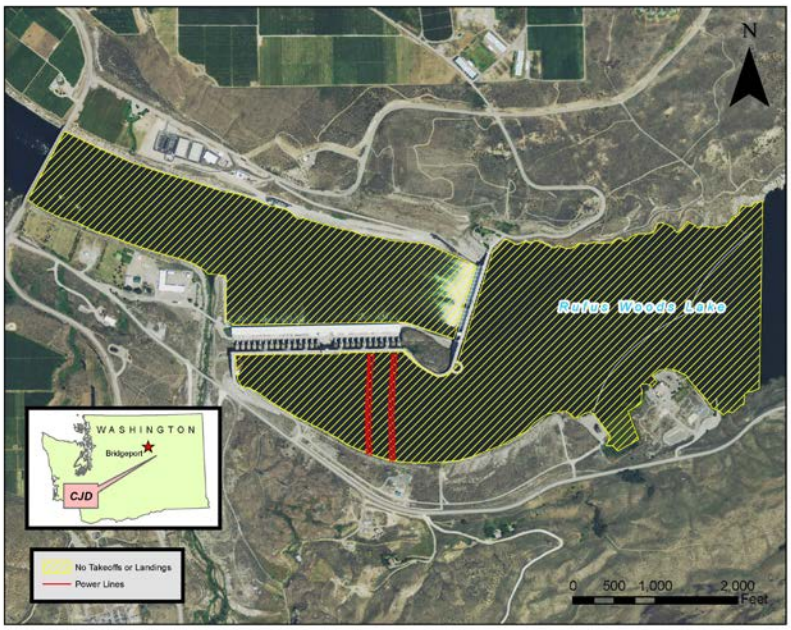
APPENDIX B
Chief Joseph Dam
(Rufus Woods Lake)

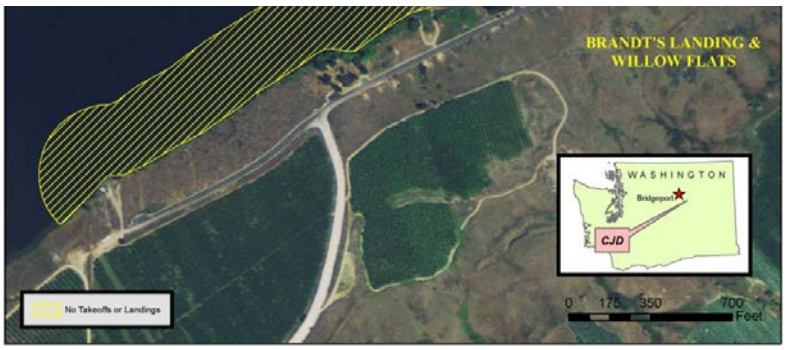
Chief Joseph Dam
PO Box 1120
Bridgeport, WA 98813
Phone: 509-686-2225

Aerial View of Chief Joseph Dam, Rufus Woods Lake, and Brandt's Landing



Chief Joseph Dam and Rufus Wood Lake restricted areas for seaplane operation with Brandt's Landing (lower right) approximately 5 miles upstream.



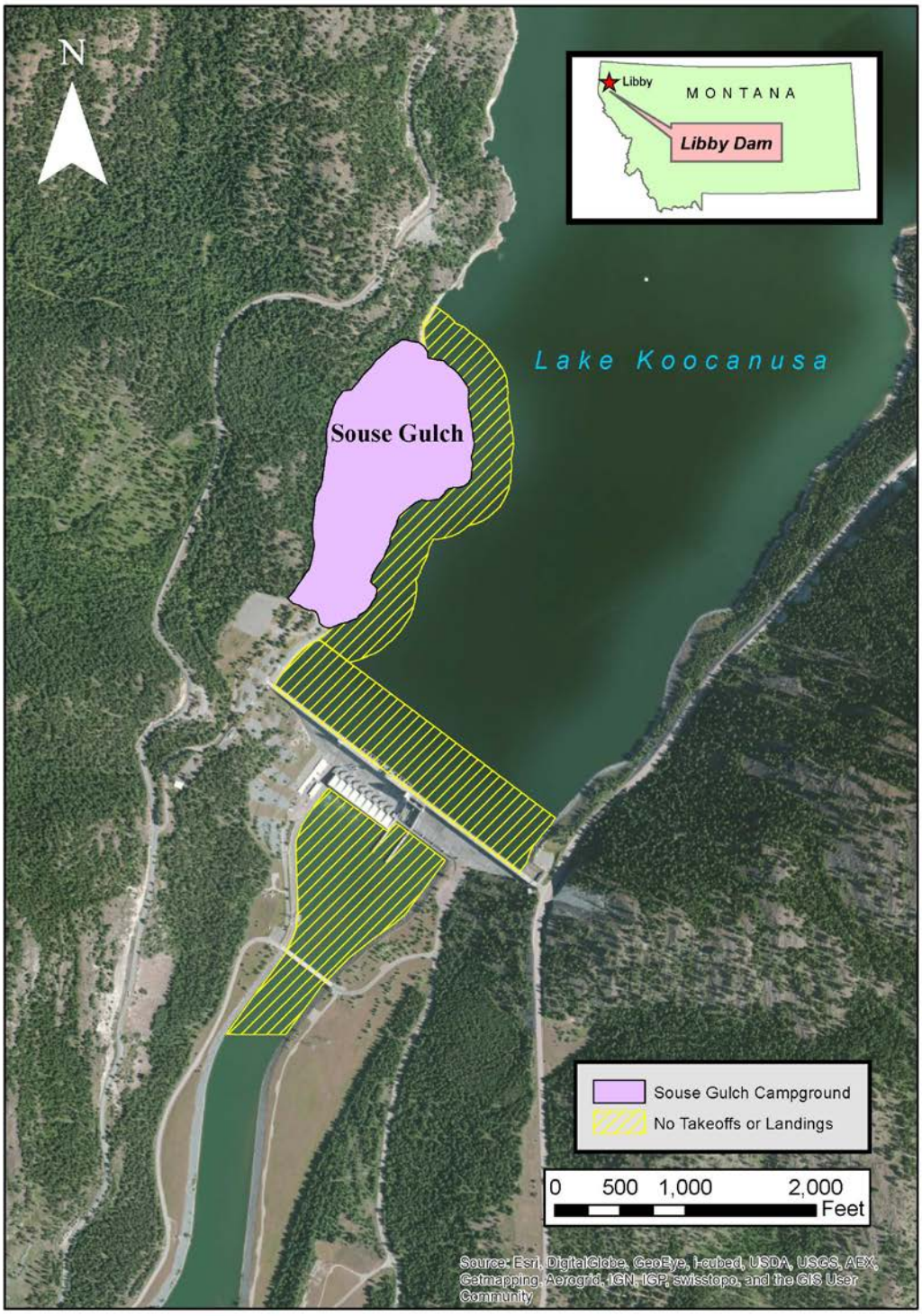


APPENDIX C

Libby Dam
(Lake Koocanusa)

Libby Dam Project Office
17877 Mountain Highway 37
Libby, MT 59923
Phone: 406-293-7751

Libby Dam and Lake Koocanusa restricted areas for seaplane operations at the Corps Recreation Site (Pink filled areas).



APPENDIX B

U.S. Coast Guard Invasive Species Guidelines for Seaplanes

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Invasive Species Guidelines

U.S. COAST GUARD, [USCG-2000-7206], Voluntary Guidelines on Recreational Activities To Control the Spread of Zebra Mussels and Other Aquatic Nuisance Species

(f) ***Seaplanes:*** Many ANS, such as the zebra mussel and Eurasian water milfoil, can be unintentionally transported from one waterbody to another on the floats of seaplanes. Therefore, it is important to clean the aircraft to remove ANS before traveling, rather than after landing at new locations. In addition, it is important for you to incorporate the procedures listed here into the operation of your seaplane. However, plane safety is the first priority when considering and following these guidelines.

Seaplane Guidelines:

Before entering the aircraft-

- Inspect and remove aquatic plants from the floats, wires or cables, and water rudders;

- Pump floats, which may contain infested water; and

- If moored in waters infested by zebra mussels for extended periods, check the transom, chine, bottom, wheel wells, and step area of floats. If zebra mussels are present on the floats, you can use (any) one of the following methods to remove or kill them:

(1) Wash the floats with hot water.

Over, please

(2) Spray the floats with high-pressure water.

(3) Dry all parts of the floats for at least 5 days.

Before takeoff-

- Avoid taxiing through heavy surface growths of aquatic plants before takeoff;

- Raise and lower water rudders several times to clear off plants. This will also minimize cable stretch and improve the effectiveness of the rudders for steering.

After takeoff-

- Raise and lower water rudders several times to free fragments of aquatic plants while over the waters you are leaving or while over land; and

- If aquatic plants remain visible on floats or water rudders, return to the lake and remove the plants.

Storage or mooring-

- Remove aircraft from the water, as is often done at seaplane bases, and allow all parts of the floats to dry. A few days of hot, summer temperatures will kill adult zebra mussels (longer drying times of up to 10 days are required to kill adult mussels during cool, humid weather); and

- Aircraft moored for extended periods in zebra-mussel-infested waters may have zebra mussels attached to the floats and should be cleaned regularly. In remote locations, where zebra mussels are present, but where there are no provisions for drying, spraying, or treating the floats with hot water, the best option available for preventing the spread of the mussels is to hand-clean the submerged portions of floats with a scrub brush and to physically remove adult mussels. (Aircraft moored for extended periods in zebra-mussel-infested waters may have zebra mussels attached to the floats and should be cleaned regularly.)

APPENDIX C

National Historic Preservation Act Compliance Documentation

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DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

CENWS-EN-ER

25 June 2014

MEMORANDUM FOR: Chief, Natural Resources Management Section

SUBJECT: Agency Determination Pursuant to Section 106 of the National Historic Preservation Act of No Potential to Affect Historic Properties for Seaplanes Operations Policy at Chief Joseph, Albeni Falls, and Libby Dams

1. The U.S. Army Corps of Engineers, Seattle District (Corps), proposes to institute a policy that places restrictions on existing and authorized seaplane operations at three of its operating projects: Chief Joseph Dam and Rufus Woods Land (CJD) in Washington; Albeni Falls Dam and Lake Pend Oreille (AFD) in Idaho; and Libby Dam and Lake Koocanusa (LD) in Montana. The Corps has been operating under a policy instituted in 1977 which adopts national policy on seaplane operations at operating projects. Restrictions on seaplane operations on water at Corps operating projects currently adheres to U.S. Coast Guard regulations under which seaplanes taxiing on water must follow using the same marine rules as all other vessels. In recent years, there has been an increase in seaplane operators which fly, land and dock at recreation sites at CJD, AFD and LD, and in particular the Rufus Wood Recreation Area a Lake Pend Oreille. The increase in seaplane traffic has led to growing concerns over risks to public safety and project infrastructure (*i.e.*, dams, powerhouses, power lines) from seaplane operations and possible accidents.

2. The proposed change in policy would specify individual prohibitions to seaplane access and operations at CJD, AFD and LD and institute District-wide prohibitions, as follows:

   Chief Joseph Dam and Rufus Woods Lake: Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset on Rufus Woods Lake. Takeoff and landing maneuvers are prohibited ½ mile from Chief Joseph Dam and the Powerhouse. Pilots are to remain 500 feet from all terrestrial and floating structures, trash booms, buildings, ports, bridges, towers and utility lines. Pilots may land and take off 300 feet from the shores that make up Rufus Woods Lake.

   Albeni Falls Dam and Lake Pend Oreille: Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing maneuvers are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure including along the shore lines of Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek recreation areas. In an emergency situation, pilots may

land inside the 500 foot buffer. Sea planes are prohibited from mooring to any public courtesy boat dock.

Libby Dam and Lake Koocanusa: Seaplane takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset. Takeoff and landing maneuvers are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure. Pilots may land and take off 300 feet from the shores of Lake Koocanusa.

District-wide: Pilots are responsible for knowing the rules and regulations pertaining to aircraft as set forth in the 36 CFR 327.4 and CFR 328 U.S. Army Corps of Engineers Title 36, Chapter III, Section 327.4 and Title 36 Cod of Federal Regulations, Part 328 dated 15 November 1977. Copies are available from any Corps of Engineers Lake Office or by writing the Public Affairs Office at 4735 East Marginal Way South, Seattle, Washington 98134-2385. Seaplanes takeoff and landing maneuvers are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes sunset. Where not specifically restricted or prohibited, recreational seaplane operations are allowed seven days a week. Commercial seaplane operations are prohibited unless authorized by District Engineer in writing. No landings or take offs are permitted in no-wake areas. On the water all seaplanes must be in conformance with U.S. Coast Guard boating safety requirements (Coast Guard Pamphlet CG-290; 46 CFR parts 25,30; and 33 CFR part 175). Operation of seaplanes is limited to recreational purposes only. The operator must remain in the vicinity of the seaplane and be reasonably available to relocate the seaplane if necessary. Planes left unattended longer than 24 hours will be presumed to have been abandoned and may be impounded. Seaplane operation including landings and take offs on Lake Pend Oreille, Rufus Woods Lake or Lake Koocanusa are at the risk of the planes owner, operator, and passenger(s). These lakes are operated as flood control/hydropower reservoirs with fluctuating pool elevations. Pilots are encouraged to contact Lake Project office(s) prior to flying for current lake elevations, cross winds and hazards including drift and storm debris.

3. The Corps has reviewed the proposed Federal action to comply with Section 106 of the National Historic Preservation Act (NHPA). In accordance with 36 C.F.R. § 800.3(a)(1), the Corps has determined that the proposed Federal action is an undertaking, but is the type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present. The Corps has determined that placing restrictions on an existing and authorized activity is an administrative action that has no bearing on the existing cultural resources environment, conditions, or management. However, the Corps recognizes that seaplane operations in general could have the potential to effect historic properties. Auditory or visual intrusion of a seaplane in flight or taxiing on water may affect historic

properties where setting, association and feeling are essential aspects of integrity, especially properties which may be significant for their traditional cultural or religious values. There also is a minor risk that a seaplane accident could cause physical damage to historic buildings, structures, or archaeological sites. Since the proposed policy only places restrictions on an existing and authorized activity, there is no essential change in the current environment, conditions, or management. The proposed policy does have the potential to have an overall beneficial effect by reducing the likelihood of any potential accident and creating restricted activity zones around the lake shores for seaplane operations which could reduce the potential for audio and visual instructions. Similarly, the buffer zone for seaplane flights around the dams, powerhouse, power lines and other infrastructure could reduce the potential for physical damage. The ability to measure impacts though would be speculative in nature as it is not known how many seaplanes will be flying to the sites in the future. The most that can be stated, however, would be that the policy restrictions provide better protection and avoidance of potential impacts to cultural resources than no seaplane restrictions as is the case with the current management regime.

4. This memorandum documents the Corps' determination for Section 106 of the National Historic Preservation Act as required at 36 C.F.R 800.11(a). Pursuant to 36 C.F.R. 800.3(a)(1), the Corps has satisfied its responsibilities to take into account the effects of this undertaking on historic properties and has no further obligation under Section 106.

5. If you have any questions or would like to clarification of the agency's findings for this undertaking, please contact the Project Historian, Ms. Mary McCormick, at mary.e.mccormick@usace.army.mil or (206) 3106-3938. I may be contacted at rolla.l.queen@usace.army.mil or (206) 316-3096.

Rolla L. Queen, Chief
Cultural Resources Section
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APPENDIX D

Endangered Species Act Compliance Documentation

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CENWS-PM-ER 07 Jul 2016

MEMORANDUM FOR RECORD

SUBJECT: Endangered Species Act "No Effect" Determination of the Seaplane Operations Policy at Chief Joseph, Albeni Falls, and Libby Dams.

1. Introduction. The United States Army Corps of Engineers (Corps), Seattle District, proposes to implement a seaplane operations policy at three of its operating dams in accordance with CFR and ER 1130-2-411. There has been a growing public interest to fly, land, and dock seaplanes at Corps recreational sites. Corps onsite natural resource managers, rangers, and dam operating staff have a growing concern for public safety for recreational users (*e.g.*, boaters, campers, swimmers, etc.) in the recreation areas associated with Corps reservoirs. Similarly, concerns exist for the protection of Corps infrastructure (*e.g.*, dam and power lines). Current existing policy appears to be insufficient to clearly inform the public regarding allowed and restricted seaplane activities. This memorandum documents a finding of no effect for species listed under the Endangered Species Act (ESA) and their designated or proposed critical habitat which may be found in the vicinities of the projects.

2. Project Location/Project Area/Action Area. The proposed project is located at Rufus Woods Lake at Chief Joseph Dam (CJD), Lake Pend Oreille at Albeni Falls Dam (AFD), and Lake Koocanusa at Libby Dam (LD), where the prohibitions of the policy includes the infrastructure associated with the operating projects and specifically in waters classified or zoned as "Fee Simple" by the Federal Government within Seattle District (Figures 1, 2, and 3). The scope of the analysis of CJD will be the area 500 feet around the CJD infrastructure including the buoys, floating structures, trash booms, buildings, ports, bridges, towers and utility lines upstream of the dam. In addition, the analysis will include the areas within 300 feet from recreation sites along the shores that make up Rufus Woods Lake. AFD's scope of analysis will include the areas within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure including along the shore lines of Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek recreation areas; and LD's scope of work is the area within 500 feet of any bridge, causeway, overhead power line, dock, dam or similar structure. The action area ("all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action": 50 CFR 402), is the entirety of the areas in the scope of analysis at CJD, AFD, and LD, including the immediate waterways in the vicinity of infrastructure, recreation areas, and shorelines within Rufus Woods Lake, Lake Pend Oreille, and Lake Koocanusa.

Figure 1. Aerial photo of Chief Joseph Dam and surrounding area with restricted take-off and landing areas.

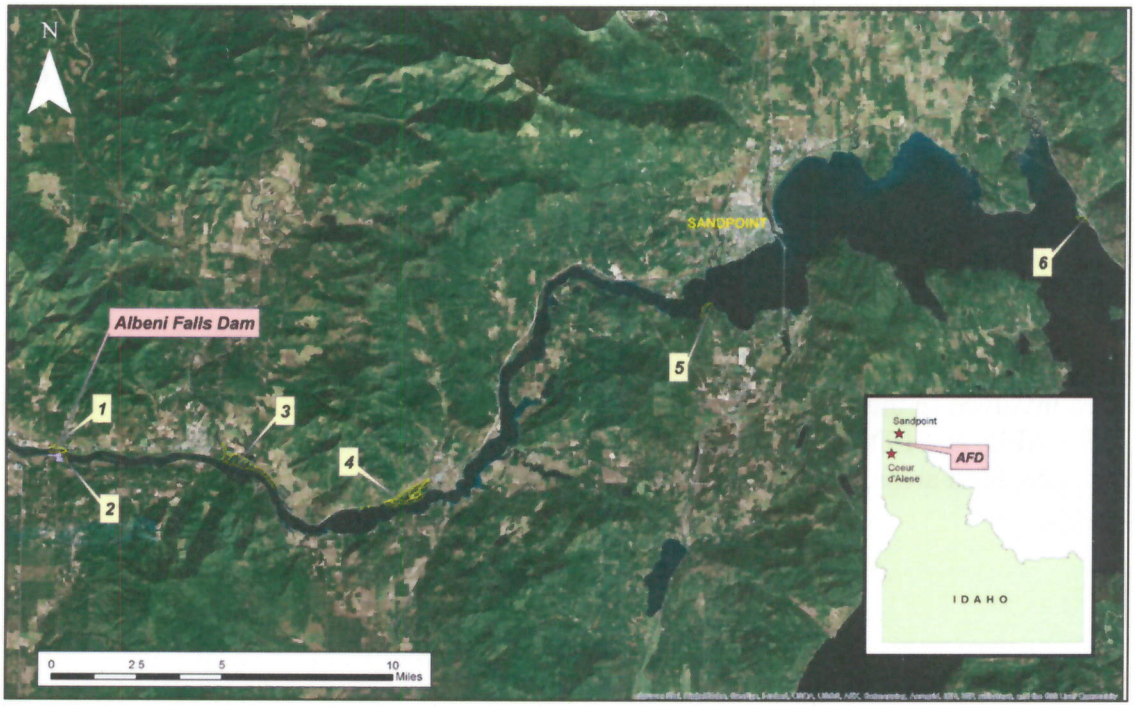

Figure 2. Aerial photo of Albeni Falls Dam and Pend Oreille Lake and River with restricted take-off and landing areas (numbered locations).

Figure 3. Aerial photo of Libby Dam and surrounding area with restricted take-off and landing areas.

3. Proposed Action. The proposed action will implement a Seaplane Operation Policy at CJD, AFD, and LD with the purpose of preventing potential destruction and damage to the infrastructure associated to the operating projects and minimize boat traffic, accidents, injuries, and fatalities at the recreation sites, which are considered at high risk if a policy with seaplane operation restrictions is not established and implemented. The action will add restrictions to seaplane operations in proximity to the Dams, Corps recreational sites, and wildlife areas. Policy will include a restricted no fly zone of at least 500 feet to ½ mile around dam infrastructures such as terrestrial and floating structures, trash booms, buildings, ports, docks, piers, bridges, causeway, towers, and utility lines. Takeoffs and landings are prohibited within 500 feet of any bridge, causeway, overhead power line, dock, and dam, and are allowed no earlier than 30 minutes before sunrise and no later than 30 minutes after sunset; commercial seaplane operations

are prohibited in the area unless authorized by the District Engineer in writing; no landings or take-offs are permitted inside no-wake areas; tying onto trees is also prohibited. Location specific restrictions include no take-off or landing within 300 feet of recreational or wildlife management areas at the shores of Rufus Woods lake; no take-off or landings within 500 feet of recreational and wildlife management areas at AFD, including Riley Creek, Priest River, Albeni Cove, Springy Point, and Trestle Creek; and no take-off or landing within 300 feet of recreational and wildlife management areas on Lake Koocanusa in vicinity of Libby Dam. In addition, the proposed policy acknowledges all appropriate State and Federal aviation laws apply to aircraft operations upon or over project lands and waters; where a seaplane is defined as an aircraft properly registered with the Federal Aviation Administration and equipped to take off from and land on the water. While on the water, seaplanes are considered marine vessels and must adhere to the rules and regulations described under the provisions of Coast Guard Rule 18 (d) and Federal Aviation Regulation 91.115.

4. Threatened and Endangered Species In Project Vicinity. Counties where projects are located contain six threatened species and four endangered species (Table 1). The gray wolf (*Canis lupus*) is present in Douglas and Okanogan counties, Washington, but has been delisted in the action area.

For species information such as life history, please go to website:

CJD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=53047

AFD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=16017

LD: http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=30053

Table 1. Federally listed threatened and endangered species near the project areas:

Name	Status	Critical Habitat
Bull trout (*Salvelinus confluentus*)	Threatened	Designated, includes action area
White sturgeon (*Acipenser transmontanus*)	Endangered	Designated, does not include action area
Woodland caribou (*Rangifer tarandus caribou*)	Endangered	Designated, does not include action area
Grizzly bear (*Ursus arctos horribilis*)	Threatened	Proposed, does not include action area
Canada lynx (*Lynx canadensis*)	Threatened	Designated, does not include action area
Ute ladies'-tresses (*Spiranthes diluvialis*)	Threatened	Not designated
Showy stickseed (*Hakelia venusta*)	Endangered	Not designated
Spalding's catchfly (*Silene spaldingii*)	Threatened	Not designated
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Proposed, does not include action area

5. Effects to Listed Species and Critical Habitat.

a. Species Effects. None of these species with the exception of bull trout are known or suspected to occur within the project vicinity due to species' specialized habitat requirements that are not present in the action area, lack of tolerance for human activity, or both. Yellow-billed cuckoo use riparian areas and may experience some disturbance from seaplane operations if present near CJD. However, they are considered very rare in Washington and are not

documented to occur near Chief Joseph Dam, nor at all in Bonner County Idaho or Lincoln County Montana. Large stands of willow and cottonwood that they favor for nesting are not present. The proposed project does not include any construction or modification elements that would cause an effect to listed species. The added restriction zones around the operating projects and their recreation sites would reduce the probability of an accident occurring at the power lines and infrastructure at CJD, AFD, and LD, thus lessening the risk of impacts to the habitat of listed species in the area. As a result, the project will have no effect on any ESA-listed species.

b. Critical Habitat Effects. The ESA requires the Federal government to designate "critical habitat" for any species it lists. Critical habitat is defined as 1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and 2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation.

i. Bull trout. Critical habitat for bull trout is present in the action area (Pend Oreille River and Lake Pend Oreille. The following Primary Constituent Elements (PCEs) represent the physical and biological features essential to the conservation of the species. The Seaplane Operations Policy will not affect these features, as no construction or modification elements will occur, and no discharges or other disturbance will be created by this project.

- Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

- Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

- An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

- Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.

- Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.

- In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to

coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable to bull trout will likely vary from system to system.

- A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.

- Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

- Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from bull trout.

6. Conclusion. The proposed action will have **no effect to listed species or to their designated or proposed critical habitat**.

Jeffrey C. Laufle
Environmental and Cultural Resources Branch

cc:
PM-ER (Harrington)
PM-CP (Nelson)
EN-ER files
EN-ER ESA files

References

USFWS (US Fish and Wildlife Service). 1976. Proposed Determination of Critical Habitat for the Grizzly Bear. Federal Register 41(215):48757-48759.

USFWS. 1978. Reclassification of the Gray Wolf in the United States and Mexico, with Determination of Critical Habitat in Michigan and Minnesota. Final Rule. Federal Register 43(47):9607-9615.

USFWS. 2009. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx. Final rule. Federal Register 74(36):8616-8702.

USFWS. 2010. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for Bull Trout in the Coterminous United States. Final Rule. Federal Register 75(200):63898-64070.

Figures

Figure 1. Aerial photo of Chief Joseph Dam and surrounding area with restricted take-off and landing areas.

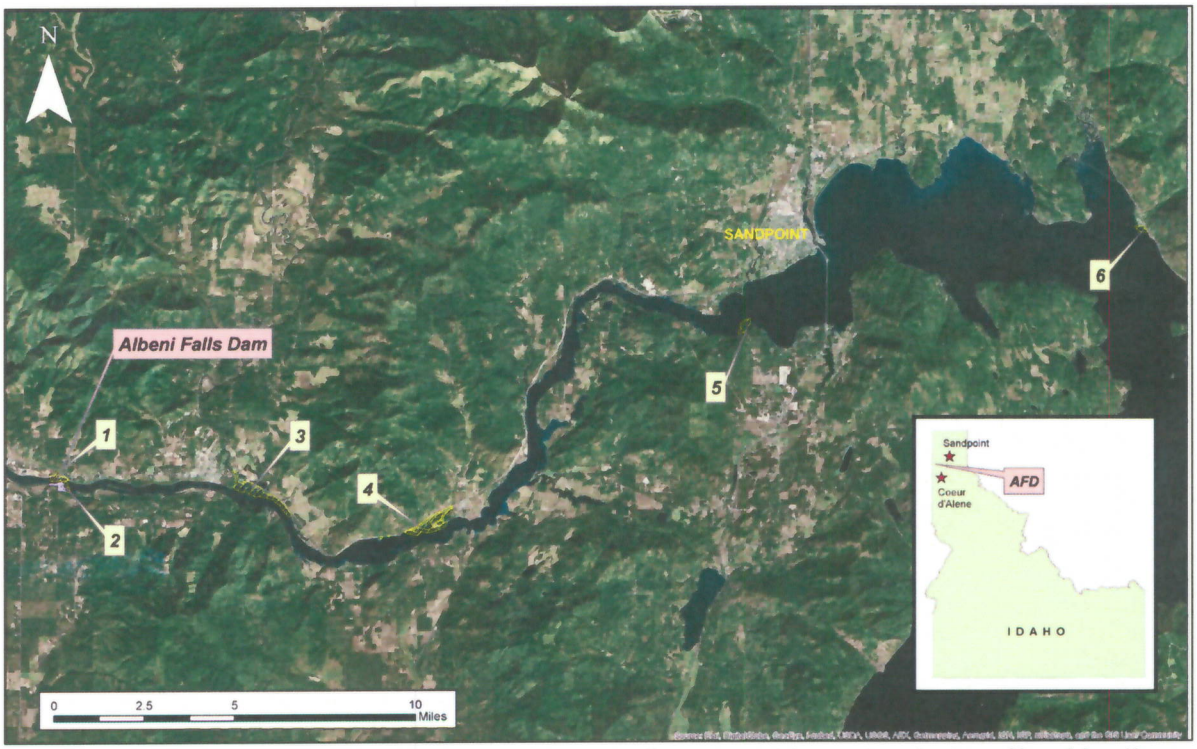

Figure 2. Aerial photo of Albeni Falls Dam and surrounding area with restricted take-off and landing areas.

Figure 3. Aerial photo of Libby Dam and surrounding area with restricted take-off and landing areas.