

# Bigfork Hydroelectric Project Wildlife Conservation Plan

*FERC Project No. 2652*



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## ACRONYMS & ABBREVIATIONS

To enhance readability, the use of acronyms and abbreviations has been minimized in this document. However, for longer terms that are frequently used throughout the document, as well as certain units of measurement, the following acronyms and abbreviations have been used.

BA	Biological Assessment
BO	Biological Opinion
EA	Environmental Assessment
FERC	Federal Energy Regulatory Commission
MDA	Montana Department of Agriculture
NWCAR	Noxious Weed Control Annual Report
ROW	Transmission Line Right-of-Way
USFWS	U. S. Fish and Wildlife Service



**Figure 1. White tailed deer in Primary Management Area**

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## 1.0 Introduction

PacifiCorp has prepared this Wildlife Conservation Plan (Plan) for the Bigfork Hydroelectric Project located in Flathead County, Montana.

### 1.1 PURPOSE

Responsible environmental management benefits PacifiCorp's customer and improves the quality of the environment in which we live. This belief is the basis for the environmental RESPECT policy that guides PacifiCorp's corporate commitment to the environment. The principles and their purpose include the following:

- Responsibility – All levels of management are responsible for integrating environmental management programs into business processes in order to measure and improve environmental performance. All employees are responsible and accountable for understanding and incorporating environmental compliance requirements into their daily work activities with the obligation to bring issues and concerns forward for resolutions.
- Efficiency – We will responsibly use natural resources and pursue increased efficiencies that reduce waste and emissions at their source. We will develop sustainable operations and implement environmental projects designed to leave a clean, healthy environment for our children and future generations.
- Stewardship – We will respect our natural resources and take care in balancing the needs of customers with our obligation to future generations. We will seek opportunities to preserve, restore, protect, and improve our natural surroundings.
- Performance – We will set challenging goals and assess our ability to continually improve our environmental performance. Through the strategic management of our assets, we will improve the environment and contribute to our business success.
- Evaluation – We will perform audits to evaluate our environmental compliance and use the results to improve our operations and their impact on the environment.
- Communication – We will foster open dialogue and informed decision making through communication of environmental information with management, employees, and the public. We will work with governments and others in creating responsible environmental laws and regulations reflective of sound public policy.
- Training – We will provide the training necessary for our employees to perform their environmental responsibilities. We will encourage and provide opportunities for

employees to learn more about the environment and foster an atmosphere of creating cost-effective solutions that go beyond compliance.

Consistent with the stewardship principle identified above, PacifiCorp has identified opportunities to preserve, restore, protect, and improve terrestrial habitats for the conservation of native, terrestrial wildlife within the Bigfork Hydroelectric Project (Project) boundary. PacifiCorp has a number of existing regulatory compliance requirements with respect to wildlife conservation. This Plan seeks to compile and synthesize PacifiCorp's various wildlife conservation requirements and efforts into one comprehensive plan. The Plan defines existing wildlife resources, potential Project impacts, and wildlife conservation opportunities and limitations within the Project area.

## **1.2 ORGANIZATION OF THE PLAN**

The Plan begins with identification of wildlife resources within the Project boundary. An analysis of potential Project impacts on the identified resources informs the subsequent discussion of conservation methods available for implementation. The Plan concludes with a record of agency consultation on the Plan.

# **2.0 WILDLIFE RESOURCES**

The Plan is not intended to provide a comprehensive inventory of wildlife resources within the Project. Additional detailed survey information is available in included in the Federal Energy Regulatory Commission (FERC) license application Final Environmental Assessment (EA) (FERC 2002), which is the primary source for the general data included in this section. A review of the location, habitat, and wildlife species within the Project is provided for context to inform analysis of Project impacts and implementation of conservation methods.

## **2.1 LOCATION**

The Project area is located one mile from the mouth Flathead Lake in sections 31 and 32 of Township 27N, Range 19E. It does not occupy any federal or tribal lands. All land associated with the Project is under PacifiCorp ownership. The Project has 78.53 acres within the FERC boundary and 197.44 acres outside the boundary. Appendix B, Bigfork Hydroelectric Project Map outlines the FERC boundary, PacifiCorp's property boundary, and the secondary management areas which include the recreation parks and trails and the Project operations areas.

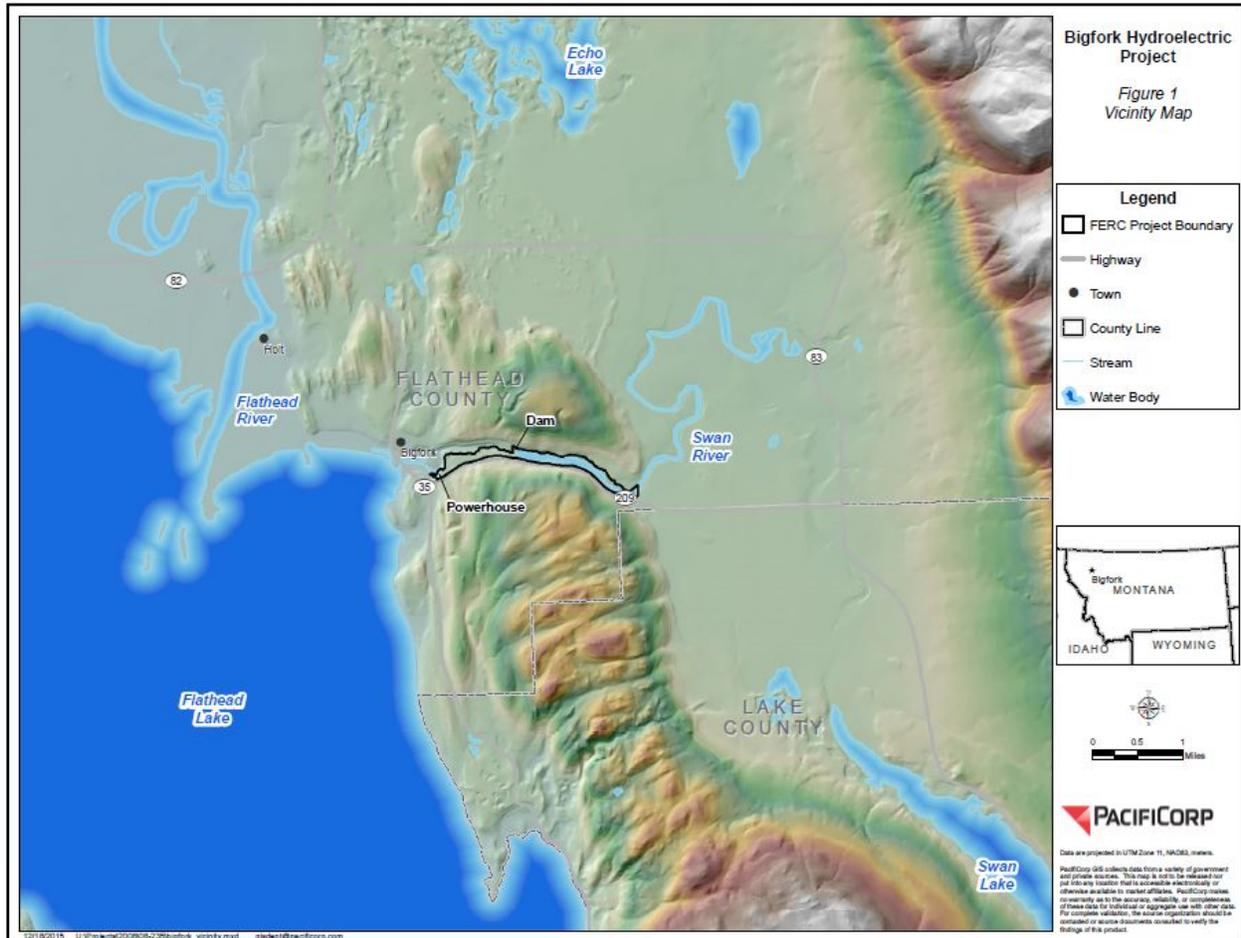


Figure 2. Bigfork Hydroelectric Project Vicinity Map

## 2.2 HABITAT

The Project area is located in a transition zone between Douglas fir (*Pseudotsuga menziesii*) and grand fir (*Abies grandis*) forest habitat types. Most of the vegetation within the Project boundary can be characterized as second-growth conifer forest. Douglas fir, grand fir, and ponderosa pine (*Pinus ponderosa*) dominate the forested stands. No old growth is present. The forest understory and upland areas are a diverse shrub layer comprised of Rocky Mountain maple (*Acer glabrum*), serviceberry (*Amelanchier arborea*), and snowberry (*Symphoricarpos albus*). The Swan River runs through the Project area providing a long stretch of riparian habitat and at least one documented wetland (Montana Natural Heritage Wetland and Riparian Mapping Center, 2021).

## 2.3 SPECIES

In the EA, six endangered or threatened species were identified that may be present in Flathead County and in the general vicinity of the Project area (FERC 2002). Water hawellia (*Hawellia*

*aquatilis*), Spalding campion (*Silene spaldingii*), bull trout (*Salvelinus confluentus*), Canada lynx (*Lynx canadensis*), bald eagle (*Haliaeetus leucocephalus*), gray wolf (*Canis lupus*), and grizzly bear (*Ursus arctos*). Appendix A is the updated 2021 United States Fish and Wildlife Service listings of Threatened, Endangered, and Candidate species. The gray wolf and bald eagle are no longer on the list. However, because the bald eagle is protected under the Bald and Golden Eagle Protection Act (16 U. S. C. 668-668c), it is considered a Special Status Species. The list presented in Table 1 is based on the Montana Natural Heritage Program 2021 website for Flathead County and selected for habitat. PacifiCorp conducted rare plant surveys in June and August 1998 but observed no sensitive species (FERC 2002).



**Figure 3. Wildlife Escape Ramp**

and red fox (*Vulpes vulpes*) are frequently observed in the Project area. The USFWS did not recommend additional general protective measures during the FERC Project relicensing process. This was primarily due to PacifiCorp's 1993 install of a ramp structure in the canal to allow wildlife that accidentally falls into the canal to safely escape (Fig 2). The Project provides and maintains forested habitat to allow most animals (big game, small mammals, birds, reptiles, and amphibians) the opportunity to avoid disturbance from hikers, anglers, and boaters.

The Project area also supports a number of species that are strongly associated with riparian habitat. River otter (*Lontra canadensis*), beaver (*Castor canadensis*), mink (*Mustela vison*), and raccoon (*Procyon lotor*) were observed during 1998 surveys (FERC 2002).

Over 160 bird species are known to occur in the Swan River watershed, which is located about 20 miles south of the Project area and contains similar habitats (USFWS 2001). No systematic bird surveys have been conducted in the Project area, but during fieldwork conducted in 1998, PacifiCorp biologists observed several species associated with forested habitats, including black-capped chickadee (*Poecile atricapillus*), brown creeper (*Certhia americana*), dark-eyed junco (*Junco hyemalis*), Clark's nutcracker (*Nucifraga columbiana*), American redstart (*Setophaga*

*ruticilla*), American robin (*Turdus migratorius*), and Wilson’s warbler (*Cardellina pusilla*) (FERC 2002).

Deep water portions of the Project’s impoundment provide foraging habitat for birds that rely on fish as a major component of their diet, such as belted kingfisher (*Megaceryle alcyon*), common merganser (*Mergus merganser*), and osprey (*Pandion haliaetus*). A pair of ospreys regularly nest on a platform near the dam, alternating with Canada geese (*Branta canadensis*) which have also nested on this platform.

Although most of the Project impoundment shoreline is steep, wetlands and shallows along the north bank provide small foraging areas for dabbling ducks, herons, and other wading birds. Great blue heron, Canada geese, and mallards have been observed.

No reptiles or amphibians were observed during fieldwork conducted in 1998, but the occurrence of rubber boa (*Charina bottae*) had been reported along the Swan River Natural Trail, this species is primarily nocturnal and is rarely observed (FERC 2002). The common garter snake and western terrestrial garter snake (*Thamnophis sirtalis*) also likely inhabit the Project area and a few amphibian species may also be present. These species include the long-toed salamander (*Ambystoma macrodactylum*), eastern toad (*Anaxyrus americanus*), Pacific tree frog (*Pseudacris regilla*), Columbia spotted frog (*Rana luteiventris*), and painted turtle (*Chrysemys picta bellii*) (FERC 2002). Wetlands in the Project area are limited in extent and complexity, and there is little shallow-water habitat associated with the Project impoundment. Regardless, there are several discrete areas upstream of the dam which appear to possibly support wetland hydrology. These areas appear to be the result of the dam and could be considered jurisdictional wetlands. A wetland survey is proposed in the near future to document all wetlands within the project area.

### 2.3.1 Sensitive Wildlife Species

Table 1 presents state-listed sensitive wildlife species that could occur in the Project area (Montana Field Guide 2021) based on known existence in Flathead County and available habitat.

**Table 1. Sensitive Species of Concern**

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Mammal</b>				
<i>Lasiurus cinereus</i>	Hoary Bat	G3G4	S3	Riparian and forest
<i>Lynx canadensis</i>	Canada Lynx	G5	S3	Subalpine conifer forest
<i>Myotis evotis</i>	Long-eared Myotis	G5	S3	Forest
<i>Myotis lucifugus</i>	Little Brown Myotis	G3	S3	Generalist
<i>Myotis thysanodes</i>	Fringed Myotis	G4	S3	Riparian and dry mixed conifer forest
<i>Myotis volans</i>	Long-legged Myotis	G4G5	S3	Conifer forest
<i>Myotis yumanensis</i>	Yuma Myotis	G5	S3	Riparian and mixed forest
<i>Pekania pennanti</i>	Fisher	G5	S3	Mixed conifer forests
<i>Sorex eximius</i>	Western Pygmy Shrew	GNR	S3	Open conifer forest, grasslands, and shrublands, often near water
<i>Ursus arctos</i>	Grizzly Bear	G4	S2S3	Conifer forest

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Bird</b>				
<i>Accipiter gentilis</i>	Northern Goshawk	G5	S3	Mixed conifer forests
<i>Ardea herodias</i>	Great Blue Heron	G5	S3	Riparian forest
<i>Botaurus lentiginosus</i>	American Bittern	G5	S3B	Wetlands
<i>Catharus fuscescens</i>	Veery	G5	S3B	Riparian forest
<i>Certhia americana</i>	Brown Creeper	G5	S3	Moist conifer forests
<i>Chlidonias niger</i>	Black Tern	G4G5	S3B	Wetlands
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	G5	S3	Conifer forest
<i>Dryocopus pileatus</i>	Pileated Woodpecker	G5	S3	Moist conifer forests
<i>Haemorhous cassinii</i>	Cassin's Finch	G5	S3	Drier conifer forest
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S4	Riparian forest
<i>Histrionicus histrionicus</i>	Harlequin Duck	G4	S2B	Mountain streams
<i>Ixoreus naevius</i>	Varied Thrush	G5	S3B	Moist conifer forests
<i>Melanerpes lewis</i>	Lewis's Woodpecker	G4	S2B	Riparian forest
<i>Nucifraga columbiana</i>	Clark's Nutcracker	G5	S3	Conifer forest
<i>Picoides arcticus</i>	Black-backed Woodpecker	G5	S3	Conifer forest burns
<i>Podiceps auritus</i>	Horned Grebe	G5	S3B	Wetlands
<i>Poecile hudsonicus</i>	Boreal Chickadee	G5	S3	Spruce-fir forests
<i>Psiloscops flammeolus</i>	Flammulated Owl	G4	S3B	Dry conifer forest
<i>Sterna hirundo</i>	Common Tern	G5	S3B	Large rivers, lakes
<i>Strix nebulosa</i>	Great Gray Owl	G5	S3	Conifer forest near open meadows
<i>Surnia ulula</i>	Northern Hawk Owl	G5	S3	Conifer forest
<i>Troglodytes pacificus</i>	Pacific Wren	G5	S3	Moist conifer forests
<b>Reptiles</b>				
<i>Elgaria coerulea</i>	Northern Alligator Lizard	G5	S3	Talus slopes / rock outcrops
<i>Plestiodon skiltonianus</i>	Western Skink	G5	S3	Open conifer forest and adjacent grasslands
<b>Fish</b>				
<i>Cottus rhotheus</i>	Torrent Sculpin	G5	S3	Mountain streams, rivers, lakes
<i>Oncorhynchus clarkii lewisi</i>	Westslope Cutthroat Trout	G5T4	S2	Mountain streams, rivers, lakes
<i>Oncorhynchus mykiss gairdneri</i>	Columbia River Redband Trout	G5T4	S1	Mountain streams, rivers
<i>Salvelinus confluentus</i>	Bull Trout	G5	S2	Mountain streams, rivers, lakes
<b>Invertebrates</b>				
<i>Coenagrion interrogatum</i>	Subarctic Bluet	G5	S1S2	Wetlands
<i>Aeshna subarctica</i>	Subarctic Darner	G5	S1S2	Forested Wetlands
<i>Somatochlora walshii</i>	Brush-tipped Emerald	G5	S1S2	Forested Wetlands
<i>Parameletus columbiae</i>	A Mayfly	G2	S1	Wetlands and Ponds
<i>Isocapnia crinita</i>	Hooked Snowfly	G5	S2	Mountain Streams to Rivers

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Invertebrates</b>				
<i>Lednia tumana</i>	Meltwater Lednian Stonefly	G1G2	S1	Alpine streams
<i>Soyedina potteri</i>	Northern Rocky Mountains Refugium Stonefly	G2	S2	Small forested mountain streams
<i>Zapada cordillera</i>	Cordilleran Forestfly	G3	S2	Alpine / Mountain streams
<i>Zapada glacier</i>	Western Glacier Stonefly	G1	S1	Alpine streams
<i>Acroloxus coloradensis</i>	Rocky Mountain Capshell	G3G4	S1	High Elevation Lakes
<i>Magnipelta mycophaga</i>	Magnum Mantleslug	G3	S2S3	Mesic/moist conifer forests
<i>Pristiloma wascoense</i>	Shiny Tightcoil	G3G4	S1S3	Mesic/moist conifer forests
<i>Prophysaon andersoni</i>	Reticulate Taildropper	G5	S1S2	Mesic/moist conifer forests
<i>Prophysaon humile</i>	Smoky Taildropper	G3	S2S3	Mesic/moist conifer forests
<i>Zacoleus idahoensis</i>	Sheathed Slug	G3G4	S2S3	Mesic/moist conifer forests

### 3.0 POTENTIAL PROJECT IMPACTS

Project construction, operation, and maintenance has modified or removed potential wildlife habitat within the Project boundary, and Project facilities, in particular waterways and transmission lines, may result in inadvertent mortality of individual animals. FERC analyzed potential Project impacts on wildlife in the Final Environmental Impact Statement (FERC 2002) prepared in support of Project relicensing. FERC’s analysis is the basis of the information provided in this section.

PacifiCorp operates the Project in a “run-of-river” scenario; inflow equals outflow, no water is stored for later use. The Project diversion from the Swan River creates a 1 mile long bypassed reach. The Projects consists of the following existing facilities: (1) a 12-foot-high, 300-foot-long concrete diversion dam with a 235-foot-long spillway; (2) an impoundment with 73 surface acres; (3) a water intake structure and a 1-mile-long flow line which includes a 1,500-foot-long concrete flume, a 1,800-foot-long canal with an asphalt lining, a 1,800-foot-long pipeline (10-foot-diameter), and a 1,860-foot-long concrete flume and canal that parallels the pipeline; (4) a forebay structure that directs water into three steel penstocks; (5) a brick power house with three turbine/generator units with a total installed capacity of 4.15 MW; (6) a decommissioned fish ladder on the right abutment (north end of the dam); (7) a 400 foot-long overhead transmission line from the powerhouse to the switchyard; (8) switch gear and step-up transformers in the switchyard; and (9) appurtenant facilities. These facilities bifurcate wildlife habitats and can function as physical barriers to terrestrial wildlife movement. Wildlife may become entrapped and drown in Project waterways. Adverse barrier effects of the Project are greatest on species with limited dispersal ability and patchy distribution (e.g., small mammals and amphibians). Project impoundments have inundated historic wetland habitat and can potentially limit amphibian breeding success through a lack of structural habitat diversity, operating water level fluctuations,

and entrainments. Project transmission lines may pose a collision and/or electrocution hazard to migratory birds.

### **3.1 WATERWAYS**

For some species the waterways may completely eliminate movement across an area, isolating subpopulations, for other species the waterways may hinder, rather than prevent, movement thus requiring animals to expend more energy to travel to a place where they can cross. Project waterways do not generally prevent movement by large and medium-sized animals (e.g., deer, coyote), but they may alter movement patterns or corridors, making individual animals more susceptible to predation or hunting mortality. Project waterways are unlikely to represent significant barriers to wide-ranging, highly-mobile species with relatively large home ranges. Large mammals are limited in where they can cross the waterways, but because they are more mobile than smaller species, they have a greater likelihood of finding crossings. However, heavy snow accumulation may make wildlife crossings difficult to see or use for wildlife, and those times, changes in movement patterns increase the likelihood that wildlife will inadvertently enter the waterway.

The quantity and quality of wetland habitats in the Project boundary are limited and adversely affected by inundation by Project waterways and variable operation water surface elevations of Project impoundments.

### **3.2 TRANSMISSION LINES**

The Project includes overhead transmission lines that may pose potential hazards for migratory birds. Large raptors, in particular, could be affected due to collision and electrocution hazards because their wingspans are of sufficient size to complete the electrical circuit between phases on conductor wires. Transmission line operation and maintenance activities can disturb nesting birds. Transmission line corridors are managed to maintain minimum distances between conductors and vegetation, and such as, these corridors are subject to habitat modification that may alter habitat.



**Figure 4. Osprey nest on constructed nest platform**

## **4.0 CONSERVATION METHODS**

### **4.1 FERC LICENSE AND SETTLEMENT AGREEMENT**

The Project dam was built in 1902. The original FERC license for the existing Bigfork Hydroelectric Project was issued on September 24, 1976. On August 30, 2000 PacifiCorp filed with FERC an application for new license for the Project. On July 22, 2002, the FERC staff issued the final Environmental Assessment which evaluated the potential impacts of relicensing the Bigfork Project and took into account comments received by the Swan River Corridor Committee, American Whitewater and Flathead Whitewater Association (jointly), Montana Department of Fish Wildlife and Parks, U. S. Department of the Interior, and Bigfork White Water Festival; Flathead Whitewater Association. The EA recommended issuing a new license. The Settlement Agreement, concerning recreation resources, was issued on November 7, 2002. On July 25, 2003 the FERC issued a new Project license which expires July 1, 2053.

As part of the relicense process, the FERC staff prepared a Biological Assessment (BA) for federally listed threatened and endangered species which was contained in staff's draft EA. In the EA, the FERC concluded that the Project, with additional staff-recommended measures; (1) would not affect Spalding campion and water howellia; (2) is not likely to adversely affect grey wolf (*Canis lupus*) Canada lynx (*Lynx canadensis*), bald eagle (*Haliaeetus leucocephalus*), and grizzly bear (*Ursus arctos*); and (3) is likely to adversely affect bull trout (*Salvelinus confluentus*). On July 22, 2002, the FERC staff issued a final EA (FERC 2002).

In June 2003, the USFWS issued a Biological Opinion for the Project regarding effects on the federally threatened bull trout. The USFWS found that relicensing the Project is not likely to jeopardize the continued existence of bull trout within the action area. Further, USFWS stated that no critical habitat has been designated in this area; therefore, none would be affected (FERC 2003).

## 4.2 SECONDARY MANAGEMENT AREAS

Primary Management Areas are lands where the primary purpose will be wildlife habitat management. Secondary management areas are PacifiCorp lands within or adjacent to the Project lands and have a primary purpose other than wildlife habitat, such as recreation; as a result, they may contain both managed and unmanaged landscapes. There are eight (8) secondary management associated with recreation sites. There are six parks including Silter Park, Powerhouse Park, Pacific Park, South Shore River and Reservoir Access, Swan River Nature Trail Parking Area, and the Kearney Rapids Boat Ramp. There are two hiking trails, the Swan River Nature Trail, and the Kayak Single Access Trail. The area between the Swan River Nature Trail is considered fishing access (FERC 2002). The Project features listed in Section 3.0 list operations areas that are considered Excluded Management Areas (e.g. forebay structure and powerhouse). Secondary and Excluded areas are identified on a map in Appendix B.

### 4.2.1 Goal

Engage with operations and recreation to ensure that any actions conducted within Primary, Secondary, or Excluded Management Areas will minimize adverse impacts to wildlife habitat and identify opportunities for enhancement where feasible. Activities and new projects with the potential to affect secondary management areas will be communicated to a PacifiCorp biologist during development and scoping of actions. Coordination with biologist is responsibility of project lead.

### 4.2.2 Objectives

- Invasive plant species management
- Leave all trees and snags cut for safety reasons as down wood in the forest adjacent to the recreation or maintenance area where management occurred.
- Apply applicable wildlife buffers
- Identify and mark secondary management areas where needed

- Identify wildlife impacts and potential habitat enhancement opportunities prior to implementing actions that will significantly modify the area

Table 2. Wildlife Habitat Management Areas

Management Areas	Acres	Description
Primary	245.58	
Secondary	26.93	All Recreation Areas
Exclusion	3.46	Powerhouse and intake areas
PacifiCorp Managed Lands	275.97	Total Area

### 4.3 WETLAND HABITAT MANAGEMENT

The EA identified several small seasonally flooded palustrine emergent wetland areas along the north shoreline of the impoundment between the Project dam and the Swan River Bridge. The dominant plant species within the wetlands is reed canarygrass (*Phalaris arundinacea*), with small patches of cattails, sedges, and rushes growing at the water’s edge. Another small wetland is located on the north side of the impoundment just downstream of the dam. This wetland was described as palustrine scrub-scrub wetland. The dominate species, is red-osier dogwood (*Cornus sericea*), with a mix of herbaceous species around small areas of open-water pond. This wetland is well above the river channel and appears to be fed by seeps from the slope above it. One forested/shrub wetland and two emergent wetlands were defined in the Natural Heritage database (Montana Natural Heritage Program 2021). It is possible other wetlands have been created along the margins of the Swan River due to the dam impoundment. These areas will be investigated in the near future to determine the presence or absence of other wetlands located within the project area.

#### 4.3.1 Goal

Protect, maintain and/or enhance wetlands to provide a diversity of habitat types for native amphibians, waterfowl, and other wildlife species.

#### 4.3.2 Objectives

- Within 5 years of the Plan implementation, identify and map existing wetlands
- Invasive plant species management
- Inspections to assess habitat conditions every third year
- Identify habitat enhancement opportunities, as needed

### 4.4 RIPARIAN VEGETATION

Riparian habitats provide a number of important ecosystem functions, including stream bank stabilization, stream temperature control, flood control, and wildlife habitat (PacifiCorp 2008).

Riparian habitat encompasses the areas that are influenced by high-water events, such as floodplains, channel migration zones, wetlands, and upland plant communities, that directly influence streams. The Swan River has about 2.5 miles of riparian habitat running through the Project. The EA identified the most common species in the riparian plant community as black cottonwood (*Populus trichocarpa*), aspen (*Populus tremuloides*), willow (*Salix spp.*), and red-osier dogwood (*Cornus sericea*) (FERC 2002). Willow, dogwood, and thin-leaf alder (*Alnus tenuifolia*) are also established on gravel bars in the bypassed reach in the vicinity of Pacific Park.

#### 4.4.1 Goal

Protect, maintain, and/or enhance riparian areas to include a diversity of native plant species and vegetation structures to benefit wildlife species that use riparian habitats.

#### 4.4.2 Objectives

- Within 5 years of the Plan implementation identify and establish buffers to protect, maintain, and enhance riparian habitat structure and functions, using the following guidelines as a minimum when planning management activities:
  - (1) 300 feet (90 m) or the height of two site potential trees, whichever is greater, for perennial fish-bearing streams
  - (2) 150 ft (45 m) for perennial non-fish-bearing streams
  - (3) 100 feet (30m) for intermittent streams
- Invasive plant species management
- Annual inspections to assess habitat conditions
- Identify habitat enhancement opportunities, as needed

### **4.5 TRANSMISSION LINE RIGHTS-OF-WAY**

Vegetation associated with the Transmission line right-of-way (ROW) areas is managed to assure safe and reliable transmission of electricity. This includes removing trees and tall shrubs that pose a risk to the transmission line and promoting low-growing vegetation and early successional habitat. ROWs are narrow, linear corridors that provide edge habitat within a forest landscape. This benefits species that prefer open areas for feeding and forested habitats for cover; in addition, big game and predators use the narrow linear openings as travel corridors (PacifiCorp, 2008). Leading research has indicated ROWs are an excellent source for pollinator habitat (Hopwood et al 2015).

#### 4.5.1 Goal

While allowing for the safe and reliable transmission of electricity, promote the establishment and maintenance of desirable vegetation on utility-owned lands in transmission line ROW to provide habitat for wildlife.

#### 4.5.2 Objectives

- Invasive plant species management
- Annual inspections to assess habitat conditions
- Identify habitat enhancement opportunities, as needed

### **4.6 FORESTED HABITAT MANAGEMENT**

#### **Figure 5. Second Growth Conifer Forest**

The Project area is located in a transition zone between Douglas fir and grand fir forest habitat types. Most of the vegetation within the Project boundary can be characterized as second-growth conifer forest. No old-growth is present. Douglas fir, grand fir, and ponderosa pine dominate the



forested stands. The shrub layer is diverse and upland areas include species such as Rocky Mountain maple, service berry and snowberry. Tree pests and diseases are found throughout forested areas within the Project area.

#### 4.6.1 Goal

Promote connectivity in forestland species composition and structures that promote forest habitat diversity for wildlife by increasing or maintaining native tree species.

#### 4.6.2 Objectives

- Identify and implement best management practices over the life of the FERC license to monitor tree stand health
- Remove dead and dying trees to maintain healthy trees, as needed.
- Remove hazard trees in parks and along hiking trails, as needed. Leave all trees and snags as down wood in the forest

- Invasive plant species management
- Identify habitat enhancement opportunities, as needed

#### 4.7 INVASIVE PLANT SPECIES MANAGEMENT

Noxious weeds have a destructive impact on Montana’s landscape by displacing native plant species, increasing soil erosion, and decreasing wildlife habitat and recreational opportunities (MDA, 2021). As a result, the EA identified invasive plant species management as important for maintaining quality wildlife habitat. As required in the Licenses agreement, PacifiCorp currently surveys, manages, and reports annually on noxious weeds. This section duplicates that report but includes an additional public awareness objective.

Montana’s Department of Agriculture determined there are 36 state listed noxious weed species (MDA 2021). Flathead County has three additional listed species. Of those 39 total species 10 are known to exist within the Project area (PacifiCorp, 2020).

**Table 3. Montana and Flathead County Noxious Weeds List**

Common Name	Scientific Name	Montana State Priority <sup>1</sup>	Flathead County Declared Noxious Weed <sup>2</sup>	Known to Occur in Flathead County <sup>1</sup>	Known to Occur in the Project Area
Baby’s Breath	<i>Gypsophila paniculata</i>		2A	X	
Blueweed	<i>Echium vulgare</i>	1B		X	
Canada thistle	<i>Cirsium arvense</i>	2B		X	X
Common (European) buckthorn	<i>Rhamnus cathartica L.</i>	2A			
Common reed	<i>Phragmites australis ssp. australis</i>	1A			
Common tansy	<i>Tanacetum vulgare</i>	2B		X	X
Curlyleaf pondweed	<i>Potamogeton crispus</i>	2B		X	
Dalmatian toadflax	<i>Linaria dalmatica</i>	2B		X	
Diffuse knapweed	<i>Centaurea diffusa</i>	2B		X	
Dyer’s woad	<i>Isatis tinctoria</i>	1A		X	
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	2A		X	
Field bindweed	<i>Convolvulus arvensis</i>	2B		X	

Common Name	Scientific Name	Montana State Priority <sup>1</sup>	Flathead County Declared Noxious Weed <sup>2</sup>	Known to Occur in Flathead County <sup>1</sup>	Known to Occur in the Project Area
Flowering rush	<i>Butomus umbellatus</i>	2A		X	
Hoary alyssum	<i>Berteroa incana</i>	2B		X	
Houndstongue	<i>Cynoglossum officinale</i>	2B		X	X
Knotweed complex	<i>Polygonum spp.</i>	1B		X	
Leafy spurge	<i>Euphorbia esula</i>	2B		X	
Meadow hawkweed complex	<i>Heiracium caespitosium</i> <i>Heiracium praealtrum</i> <i>Heiracium floridundum</i> <i>Pilosella caespitosa</i>	2A		X	
Medusahead	<i>Taeniatherum caput-medusae</i>	1A			
Musk thistle	<i>Carduus nutans</i>		2A	X	X
Orange hawkweed	<i>Hieracium aruantiacum</i>	2A		X	X
Oxeye daisy	<i>Leucanthemum vulgare</i>	2B		X	X
Perennial pepperweed	<i>Lepidium latifolium</i>	2A		X	
Purple loosestrife	<i>Lythrum spp.</i>	1B		X	
Rush skeletonweed	<i>Chondrilla juncea</i>	1B		X	
Russian knapweed	<i>Acroptilon repens</i>	2B		X	
Russian thistle	<i>Salsosa tragus</i>		2A	X	
Saltcedar	<i>Tamarix spp.</i>	2B		X	
Scotch broom	<i>Cytisus scoparius</i>	1B			
Spotted Knapweed	<i>Centaurea maculosa</i>	2B		X	X
St. Johnswort (goat weed)	<i>Hypericum perforatum</i>	2B		X	X
Sulfur (erect) cinquefoil	<i>Potentilla recta</i>	2B		X	
Tansy ragwort	<i>Senecio jacobea</i>	2A		X	X

Common Name	Scientific Name	Montana State Priority <sup>1</sup>	Flathead County Declared Noxious Weed <sup>2</sup>	Known to Occur in Flathead	Known to Occur in the Project Area
Tall buttercup	<i>Ranunculus acris</i>	2A		X	
Tumble mustard	<i>Sisymbrium altissimum</i>		2A	X	
White campion	<i>Silene latifolia</i>		2A	X	
Whitetop	Cardaria draba,, Lepidium draba)	2B			
Ventenata	Ventenata dubia	2A		X	
Yellowflag iris	<i>Iris pseudacorus</i>	2A		X	
Yellow toadflax	<i>Linaria vulgaris</i>	2B		X	
Yellowstar Thistle	<i>Centaurea solstitialis</i>	1A		X	X

Source: <sup>1</sup> Montana Department of Agriculture 2020  
<sup>2</sup> Flathead County 2020

#### 4.7.1 Goal

Work to prevent the establishment and spread of weeds currently listed by the Montana Department of Agriculture and Flathead County Weed Control District.

#### 4.7.2 Objectives

- Identify infestation of weeds and other undesirable or invasive plant species as part of the implementation of Noxious Weed Control Annual Plan (NWCAR).
- Identify and implement best management practices over the life of the license to discourage and control the establishment of weeds and other undesirable or invasive plant species in areas disturbed by PacifiCorp operations and maintenance, wildlife habitat management, and recreation-related activities.
- Control known infestations of Priority 1 and Priority 2 designate weeds and other undesirable or invasive plants, as part of implementing the NWCAR.
- Monitor the effectiveness of control measures and best management practices over the life of the FERC license.
- Coordinate with the county weed control boards to meet state and local noxious weed objectives and requirements on PacifiCorp lands.

- Enhance public awareness by posting noxious weed awareness notices on PacifiCorp park kiosks and install boot brush at Swan River Nature Trail Head parking lot.

## 4.8 RAPTOR MANAGEMENT

Raptors, or birds of prey, include eagles, accipiter's, ospreys, vultures, hawks, falcons, and owls. Currently, there are no threatened or endangered species that occur on the Project. Eagles have special protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), and all raptors and their nests are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712, MBTA). Because raptors are top predators, they are key species for assessing changes in habitat and their prey species populations, as well as chemical contaminations. (e.g. mercury, lead).

### 4.8.1 Goal

Provide and protect habitat for, and minimize or avoid disturbance to raptors, including bald eagles and ospreys.



**Figure 6. Osprey Nest Deterrent**  
(USFWS 2019) (Fig 6).

- Manage standing live and dead trees along designated trails through Project lands to maintain safety based on U. S. Forest Service Long-Range Planning for Developed Sites (USDA Forest Service 1992).

### 4.8.2 Objectives

- Opportunistically identify areas that could be enhanced to provide future nesting, perching, or roosting habitat for raptors (Fig 4).
- Continue to manage PacifiCorp electrical, distribution, and transmission facilities according to PacifiCorp guidelines, which are based on industry standards for avian protection on power lines. Update PacifiCorp guidelines over the license period, if needed, to reflect changed in industry standards.
- Manage identified avian interaction problems with Flathead Electric electrical and transmission facilities, as described in the Settlement Agreement consistent with the Avian Power Line Interaction Committee guidelines

**Table 4. Potentially Breeding Raptor Species in the Vicinity of Project area**

Common Name	Species Name	Federal Status <sup>1</sup>	State Status <sup>1</sup>
Bald Eagle	<i>Haliaeetus leucocephalus</i>	G5	S4
Cooper’s Hawk	<i>Accipiter cooperii</i>	G5	S4B
Northern Goshawk	<i>Accipiter gentilis</i>	G5	S3
Northern Harrier	<i>Circus hudsonius</i>	G5	S4B
Osprey	<i>Pandion haliaetus</i>	G5	S5B
Red-tailed Hawk	<i>Buteo jamaicensis</i>	G5	S5B
Sharp-shinned Hawk	<i>Accipiter striatus</i>	G5	S4B

<sup>1</sup> Source Montana Field Guide

## 5.0 IMPLEMENTATION SCHEDULE

**Table 5. Implementation Schedule**

Task	Objective	Frequency and/or Due Date
4.2 Secondary Management Area	Invasive species management	Annual
	Identify and mark secondary management areas where needed	As Needed
	Identify wildlife impacts and potential habitat enhancement opportunities	As Needed
4.3 Wetland Habitat Management	Identify and map existing wetlands	2026
	Invasive species management	Annual
	Habitat condition surveys	Every 3 <sup>rd</sup> Year, starting in 2022
	Identify habitat enhancement opportunities	As Needed
4.4 Riparian Vegetation	Identify and establish buffers to protect riparian habitat structure and functions	2026
	Invasive species management	Annual
	Inspections to assess habitat conditions	Annual
	Identify habitat enhancement opportunities	As Needed

<b>Task</b>	<b>Objective</b>	<b>Frequency and/or Due Date</b>
4.5 Transmission Line ROW	Invasive species management	Annual
	Identify habitat enhancement opportunities	As Needed
4.6 Forested Habitat Management	Identify and implement best management practices. Survey stands every 5 years	Every 5 years
	Remove dead and dying trees to maintain forest health	As Needed
	Remove hazard trees in parks and along hiking trails	As Needed
	Invasive plant species management	Annually
	Identify habitat enhancement opportunities	As Needed
4.7 Invasive Plant Species Management	Conduct survey and publish Annual Report to identify outcome of treatments	Annually
	Implement best management practices to control the establishment of invasive plant species	Annually
	Post noxious weed awareness notices on all kiosks and update as needed	As Needed
	Install boot brush at Swan River Nature Trail Head parking lot	2021



**Figure 7. Painted Turtles warming on a log the Swan River**

## **6.0 AGENCY CONSULTATION**

## McCune, Kimberly (PacifiCorp)

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**To:** Aceituno, Kevin  
**Subject:** RESPONSE REQUESTED: Draft Bigfork Wildlife Conservation Plan; 30-day Review Period

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**From:** Aceituno, Kevin <kevin\_aceituno@fws.gov>  
**Sent:** Thursday, July 15, 2021 1:45 PM  
**To:** McCune, Kimberly (PacifiCorp) <Kimberly.McCune@pacificorp.com>  
**Subject:** RESPONSE REQUESTED: Draft Bigfork Wildlife Conservation Plan; 30-day Review Period

Hi Kimberly,

The U.S. Fish and Wildlife Service (Service) received PacifiCorp's Bigfork Hydroelectric Project's Draft Wildlife Conservation Plan. At this time the Service does not have any comments or recommendations. As always, we appreciate the opportunity to provide input.

Thank you and take care,  
Kevin

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Kevin Aceituno  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Creston Fish and Wildlife Center  
780 Creston Hatchery Road  
Kalispell, MT 59901  
(406) 758-6871

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**From:** McCune, Kimberly (PacifiCorp) <[Kimberly.McCune@pacificorp.com](mailto:Kimberly.McCune@pacificorp.com)>  
**Sent:** Wednesday, June 16, 2021 8:32 AM  
**To:** Conard, Ben <[ben\\_conard@fws.gov](mailto:ben_conard@fws.gov)>; Rosenthal, Leo <[lrosenthal@mt.gov](mailto:lrosenthal@mt.gov)>; Aceituno, Kevin <[kevin\\_aceituno@fws.gov](mailto:kevin_aceituno@fws.gov)>  
**Cc:** Peterman, Summer (PacifiCorp) <[Summer.Peterman@pacificorp.com](mailto:Summer.Peterman@pacificorp.com)>  
**Subject:** RESPONSE REQUESTED: Draft Bigfork Wildlife Conservation Plan; 30-day Review Period

Because of your interest and expertise in wildlife resources in the Project area, we request your review of the attached Bigfork Wildlife Conservation Plan.

We would appreciate your feedback by **close of business Friday, July 16, 2021**.

Thank you.

**Kimberly McCune**  
Sr. Project Coordinator  
PacifiCorp – Hydro Resources  
825 NE Multnomah St., Suite 1800  
Portland, OR 97232

## 7.0 REFERENCES

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## Appendix A. Montana Species of Concern

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Ferns and Fern Allies (Pteridophyta)</b>				
<i>Asplenium trichomanes-ramosum</i>	Limestone Maidenhair Spleenwort	G5	S3	
<i>Botrychium sp. (SOC)</i>	Moonworts (SOC)	G1G3	S1S3	
<i>Cryptogramma cascadenis</i>	Cascade Rockbrake	G5	S3	
<i>Dryopteris cristata</i>	Crested Shieldfern	G5	S3	Wetland/Riparian
<i>Equisetum palustre</i>	Marsh Horsetail	G5	S3	
<i>Equisetum pratense</i>	Meadow Horsetail	G5	S2	
<i>Lycopodium dendroideum</i>	Treelike Clubmoss	G5	S2	Forests (Mesic valley and montane)
<i>Phegopteris connectilis</i>	Northern Beechfern	G5	S2S3	Forests (Mesic valley to subalpine)
<b>Flowering Plants - Dicots (Magnoliopsida)</b>				
<i>Alnus rubra</i>	Red Alder	G5	S2S3	Forest (Mesic)
<i>Corydalis sempervirens</i>	Pale Corydalis	G5	S2	Forests/Meadows (Recently-burned)
<i>Delphinium burkei</i>	Meadow Larkspur	G4	S1S2	Meadows (Moist, low-elevation)
<i>Delphinium depauperatum</i>	Slim Larkspur	G5	S2	
<i>Gratiola ebracteata</i>	Bractless Hedge-hyssop	G4	S2	Wetland/Riparian
<i>Idahoia scapigera</i>	Scaepod	G5	S1S2	Vernally moist, rock ledges
<i>Impatiens aurella</i>	Pale-yellow Jewel-weed	G4	S3	riparian
<i>Lathyrus bijugatus</i>	Latah Tule Pea	G4	S2S3	Forest (Open/Valley)
<i>Lobelia kalmii</i>	Kalm's Lobelia	G5	S3	
<i>Mimulus ampliatus</i>	Stalk-leaved Monkeyflower	G3	S3	Vernally moist soil (Valleys to subalpine)
<i>Mimulus breviflorus</i>	Short-flowered Monkeyflower	G4	S1S2	Rock/Talus (Mesic, Montane)
<i>Mimulus floribundus</i>	Floriferous Monkeyflower	G5	SH	
<i>Petasites frigidus var. frigidus</i>	Arctic Sweet Coltsfoot	G5T5	S2	Wetland/Riparian
<i>Pinguicula macroceras</i>	California Butterwort	G4	S3	
<i>Ranunculus orthorhynchus</i>	Straightbeak Buttercup	G5	S1S2	Wetland/Riparian (Montane)
<i>Rubus arcticus</i>	Nagoonberry	G5	S2	
<i>Senecio eremophilus</i>	Desert Groundsel	G5	S1S2	Wetland/Riparian
<i>Silene spaldingii</i>	Spalding's Catchfly	G2	S2	Grasslands (Intermountain)
<i>Vaccinium myrtilloides</i>	Velvetleaf Huckleberry	G5	S2	Forests
<i>Acorus americanus</i>	Sweetflag	G5	S1S2	Wetland/Riparian

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Flowering Plants - Dicots (Magnoliopsida)</b>				
<i>Allium geyeri</i> var. <i>geyeri</i>	Geyer's Onion	G4G5T4	S3	
<i>Amerorchis rotundifolia</i>	Round-leaved Orchis	G5	S3	Wetland/Riparian
<i>Carex amplifolia</i>	Big-leaf Sedge	G4	S3	Wetland
<i>Carex chordorrhiza</i>	Creeping Sedge	G5	S3	Wetland/Riparian
<i>Carex comosa</i>	Bristly Sedge	G5	S1S2	Wetland/Riparian
<i>Carex glacialis</i>	Alpine Sedge	G5	S3	
<i>Carex sychnocephala</i>	Many-headed Sedge	G5	S1S2	Wetland/Riparian
<i>Cypripedium passerinum</i>	Sparrow's-egg Lady's-slipper	G5	S2S3	Forests (Mesic bottoms)
<i>Eleocharis bella</i>	Delicate Spikerush	G5	S1	
<i>Elymus triticoides</i>	Beardless Wildrye	G4G5	S3	
<i>Epipactis gigantea</i>	Giant Helleborine	G4	S2S3	Wetland/Riparian
<i>Goodyera repens</i>	Northern Rattlesnake-plantain	G5	S3	Mesic Forest
<i>Juncus covillei</i>	Coville's Rush	G5	S2S3	Wetland/Riparian
<i>Piperia elongata</i>	Dense-flower Rein Orchid	G4	S1	
<i>Scheuchzeria palustris</i>	Pod Grass	G5	S3	Wetland/Riparian
<i>Schoenoplectus subterminalis</i>	Water Bulrush	G5	S3	Wetland/Riparian
<i>Scolochloa festucacea</i>	Sprangletop	G5	S1	
<i>Tofieldia pusilla</i>	Small Tofieldia	G5	S2	Alpine
<b>Bryophytes (Bryophyta)</b>				
<i>Aloina brevirostris</i>	Short-beaked Aloe Moss	G4G5	S1	
<i>Catoscopium nigratum</i>	Black Golf Club Moss	G5	S1	
<i>Dicranella schreberiana</i>	Schreber's Dicranella Moss	G5	S1	
<i>Grimmia brittoniae</i>	Britton's Dry Rock Moss	G2	S2	
<i>Hamatocaulis vernicosus</i>	Hamatocaulis Moss	G5	S1	
<i>Meesia longiseta</i>	Meesia Moss	G5	S1	
<i>Meesia triquetra</i>	Meesia Moss	G5	S2	
<i>Meesia uliginosa</i>	Meesia Moss	G5	S1S2	
<i>Meiotrichum lyallii</i>	Lyall's Polytrichum Moss	G3G5	S1	
<i>Neckera douglasii</i>	Douglas' Neckera Moss	G4	S1	
<i>Paludella squarrosa</i>	Angled Paludella Moss	G5	S1S2	
<i>Paraleucobryum enerve</i>	A Windblown Moss	G5?	S1	
<i>Sarmentypnum exannulatum</i>	Warnstorfia Moss	G5	S1	
<i>Scorpidium revolvens</i>	Limprichtia Moss	G5	S1	

Scientific Name	Common Name	Federal Rank	State Rank	Short Habitat
<b>Bryophytes (Bryophyta)</b>				
<i>Scorpidium scorpioides</i>	A Scorpidium Moss	G5	S2	
<i>Sphagnum angustifolium</i>	Narrowleaf Peatmoss	G5	S2	
<i>Sphagnum centrale</i>	A Peatmoss	G5	S1	
<i>Sphagnum contortum</i>	Contorted Sphagnum Moss	G5	S1	
<i>Sphagnum fimbriatum</i>	Fringed Bogmoss	G5	S1	
<i>Sphagnum fuscum</i>	Brown Hair Peatmoss	G5	S2	
<i>Sphagnum magellanicum</i>	Red Spoon Peatmoss	G5	S1	
<i>Sphagnum mendocinum</i>	Mendocino Peatmoss	G4G5	S1	
<b>Lichens (Fungi)</b>				
<i>Cetraria commixta</i>	Friendly Camouflage Lichen	G5	S1	
<i>Cladonia botrytes</i>	Stump Pixie-Cup Lichen	G5	S1	
<i>Collema curtisporum</i>	Pustulate Tarpaper Lichen	G3	S1	
<i>Lobaria hallii</i>	Gray Lungwort Lichen	G4?	S2	
<i>Phaeophyscia kairamoi</i>	Least Shadow Lichen	G4G5	S2	
<i>Ramalina obtusata</i>	Hooded Bush Lichen	G5	S2	
<i>Solorina bispora</i>	Lesser Tundra Owl Lichen	G5	S1S2	
<i>Solorina spongiosa</i>	Fringed Chocolate Chip Lichen	G4G5	S1S2	
<i>Verrucaria kootenaica</i>	Kootenai Speck Lichen	G2	S1S2	

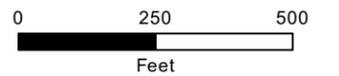
# Bigfork Project Area

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- Gate
- Gated Bridge

## Recreation Facility

- Boat Ramp
- Day Use
- Parking
- River Access
- Trailhead

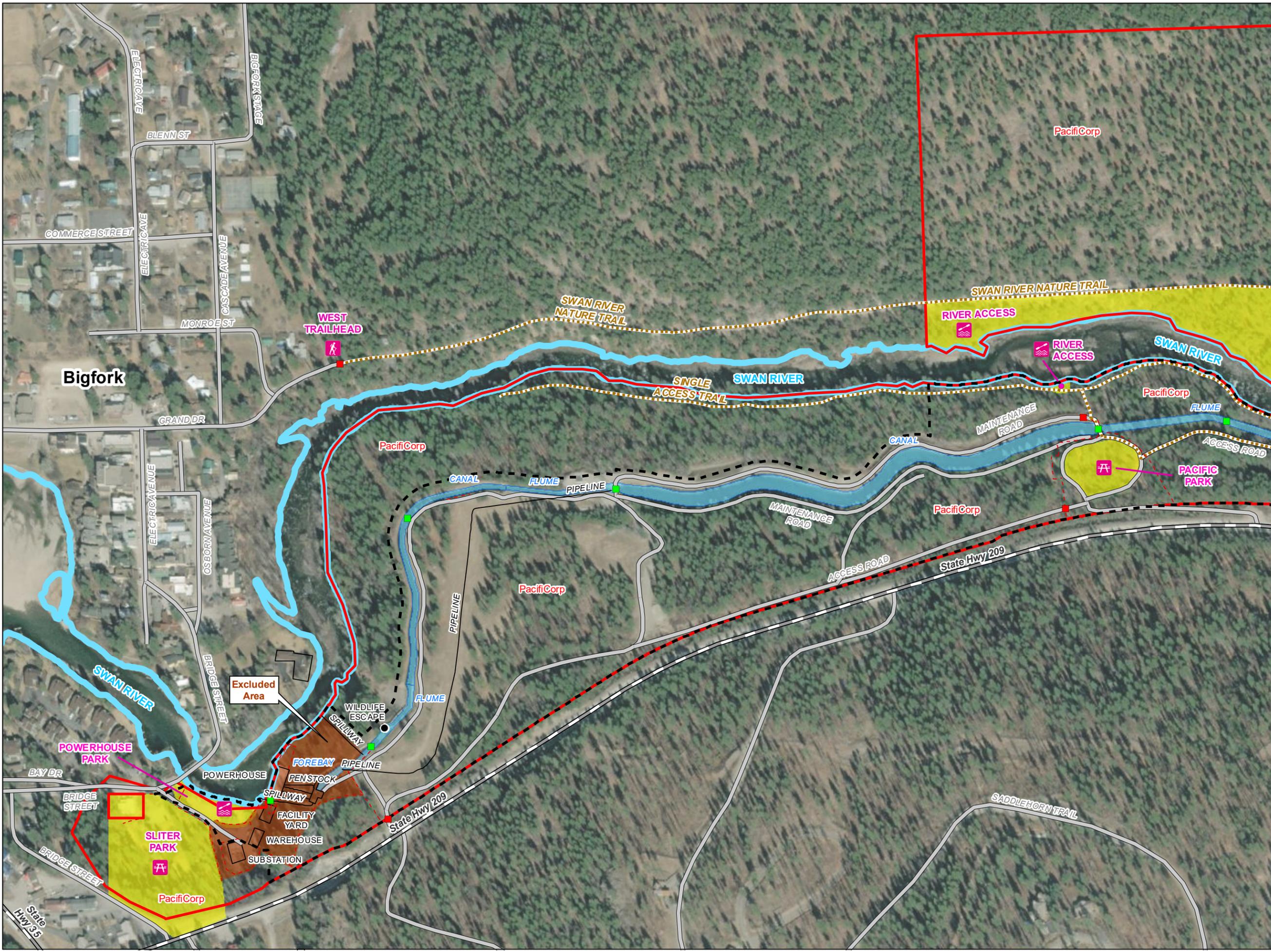
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- Facility Line
- - - Fence
- == Highway
- Road
- Stream
- Facility, Building
- - - FERC Boundary
- PacifiCorp Land
- Shoreline
- Canal, Flume
- Secondary Management Area
- Excluded Area



1:4,000



PacifiCorp makes no representations or warranties as to the accuracy, completeness or fitness for a particular purpose with respect to the information contained in this map. PacifiCorp shall have no responsibility or liability to any person or entity resulting from the use of any information furnished in this map.



# Bigfork Project Area

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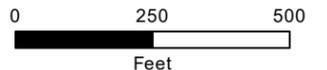
Central

- Facility Point
- Gate
- Gated Bridge

## Recreation Facility

- 🚤 Boat Ramp
- 🏠 Day Use
- 🅑 Parking
- 🌊 River Access
- 🚶 Trailhead

- ⋯ Recreation Trail
- Facility Line
- - - Fence
- == Highway
- Road
- Stream
- ▭ Facility, Building
- ⋯ FERC Boundary
- ▭ PacifiCorp Land
- ▭ Shoreline
- ▭ Canal, Flume
- ▭ Secondary Management Area
- ▭ Excluded Area

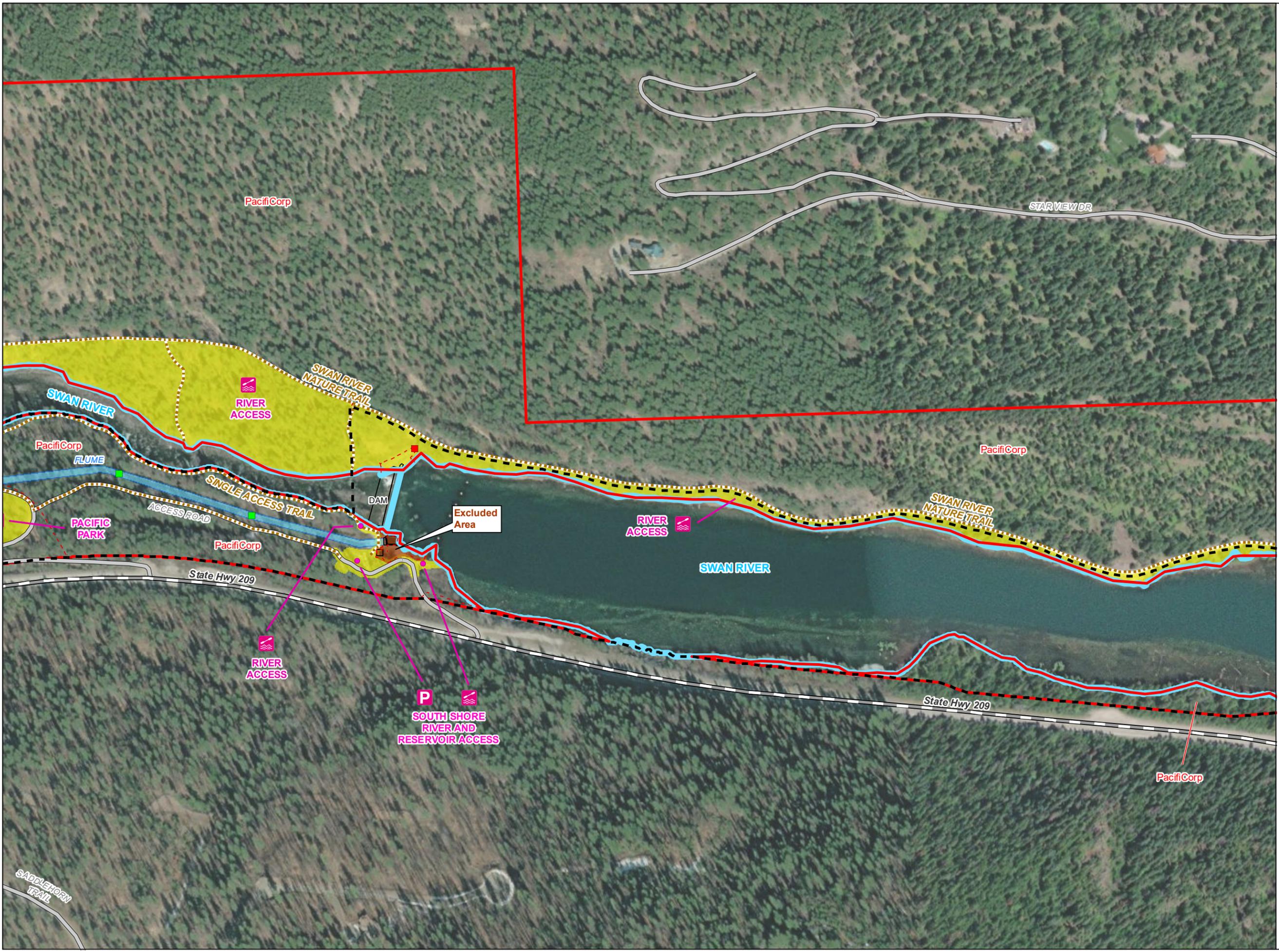


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# Bigfork Project Area

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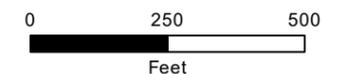
East

- Facility Point
- Gate
- Gated Bridge

## Recreation Facility

- Boat Ramp
- Day Use
- Parking
- River Access
- Trailhead

- Recreation Trail
- Facility Line
- - - Fence
- == Highway
- Road
- Stream
- Facility, Building
- FERC Boundary
- PacifiCorp Land
- Shoreline
- Canal, Flume
- Secondary Management Area
- Excluded Area



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