



J. Curtis Earl
IDAHO AVIATION FOUNDATION
Box 2016
Eagle, Idaho 83616



November 18, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Big Creek Hydroelectric Project (FERC Project No. P-10721)
Filing of Draft License Application

Dear Secretary Bose:

Pursuant to the regulations of the Federal Energy Regulatory Commission (FERC) for the Traditional Licensing Process (TLP), 18 CFR 4.61 for Minor Power Projects 1.5 Megawatts or Less, the Idaho Aviation Foundation (IAF) submits the application for a relicense/license for the Big Creek Hydroelectric Project, FERC Project No. P-10721 (Project), located on McCorkle Creek in a remote mountainous region of central Idaho, 24 miles northeast of Yellow Pine, in Valley County, Idaho.

IAF has been designated by the FERC as the Non-federal representative for the purposes of consultation, pursuant to section 7 of the Endangered Species Act and the joint agency regulations thereunder at 50 CFR Part 402, Section 305(b) of the Magnuson – Stevens Fishery Conservation and Management Act and the implementing regulations at 50 CFR 600.920 and Section 106 of the National Historic Preservation Act. The ISHPO found that actions of the Big Creek Hydroelectric Project, pursuant to 36 CFR 800.5, and based on the Submitted Project information, would result in no historical properties affected (36 CFR 800.4(d)). The IAF will also, in accordance with 18 CFR 5.23(b), submit a Clean Water Act 401 application to the state of Idaho no later than 60 days after FERC issues a public notice that the application for new license is ready for environmental analysis per instructions from Idaho DEQ.

One study requested by the US Forest Service, Payette National Forest, in order to evaluate compliance with Forest Plan Standard SWST06, was for the IAF to work with the Forest Service to collect stream flow information in McCorkle Creek. The study has already been initiated and includes completing the calibration process for the already installed streamflow staff gauge above the Project diversion and recording flow data on a regular basis throughout the Project operating season. Data will be collected over multiple seasons to establish maximum, minimum, and mean average flow rates during the periods of expected hydropower operation.

In accordance with 18 CFR 5.18(a)(3)(i), the IAF is submitting this cover letter and electronic copy of the Draft License Application including Exhibits and Appendices via Certified Mail to the entities on the enclosed Distribution List. The entities include those resource agencies, Indian tribes, non-governmental organizations, and members of the general public that the IAF has identified as having potential interest in the new license/relicense proceedings. The Draft License Application, associated Exhibits, and Appendices will also be available for review on the IAF website <https://idahoaviationfoundation.org/projects.php#p12> as “2019 FERC Draft License Application”.

Sincerely,

A handwritten signature in black ink that reads "James E. Davies". The signature is fluid and cursive, with the first name "James" being the most prominent.

Jim Davies
President
Idaho Aviation Foundation

Encl: Draft License Application for Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

eFile: Kimberly D. Bose, Secretary
Via eLibrary at www.ferc.gov

USB flash drive: Matt Cutlip
Federal Energy Regulatory Commission
805 SW Broadway, Suite 550
Portland, OR 97205
503-552-2762
matt.cutlip@ferc.gov

DRAFT LICENSE DOCUMENT

Big Creek Hydroelectric Project
(FERC Project No. 10721)



Idaho Aviation Foundation
Eagle, Idaho

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Draft License Application For Minor Water Power Project – 1.5 MW or Less Using the Traditional Licensing Process (TLP)

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
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November 18, 2019

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

Draft License Application For Minor Water Power Project – 1.5 MW or Less Using the Traditional Licensing Process (TLP)

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BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Draft License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

General Content

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537

info@idahoaviationfoundation.org

November 18, 2019

BIG CREEK HYDROELECTRIC PROJECT

PROJECT No. P-10721

GENERAL CONTENT REQUIREMENTS

DRAFT LICENSE APPLICATION

November 18, 2109

1. Identify land and water rights that the applicant has or intends to obtain that are necessary to operate the project:

The Idaho Aviation Foundation (IAF) is authorized to use or occupy National Forest Service lands in the Payette National Forest subject to the terms and conditions of a special use permit (Authorization ID: KRL202). The permit covers 0.4 acres and is described as being located in T.21N., R.9E., section 26. The permit is issued for the purpose of the operation and maintenance of the Big Creek Hydropower Project (P-10721). The Project includes a water diversion structure, penstock, powerhouse, transmission line, and access road associated with the Hydroelectric facilities on National Forest Service lands.

The water right, also included in the special use permit, for this use is issued to the U.S. Department of Agriculture, Forest Service, as number 77-07334. This right is issued for use by the IAF of 0.75 cfs from McCorkle Creek from January 1 – December 31. (The Project is normally operated May – October)

2. Names and mailing addresses are provided for the following:
 - (a) Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located:

Valley County Commissioners
PO Box 1350
Cascade, ID 83611

USDA Forest Service
1400 Independence Avenue SW
Washington, DC 20250-1111

US Forest Service
Intermountain Region (R4)
324 25th Street
Ogden, UT 84401

Payette National Forest
800 W Lakeside Avenue
McCall, ID 83638

- (b) City: None

(c) Irrigation District: None

(d) Political Subdivision: None

(e) Indian tribes that may be affected by the project:

Nez Perce Tribe

Northern Idaho Agency

David Shaw, Acting Superintendent

Bureau of Indian Affairs

PO Drawer 277

Lapwai, ID 83540

Nez Perce Tribe

Nez Perce Agency

Mary Jane Miles, Chairman

PO Box 305

Lapwai, ID 83540-0305

VERIFICATION

You must provide Verification in one of the following forms: Either

(1) a sworn, notarized statement or (2) an unsworn declaration in the following form, or

(2) "I declare under penalty of perjury that the foregoing is true and correct. Executed on November 18, 2019."

A handwritten signature in black ink that reads "Nadine Burak". The signature is written in a cursive, flowing style.

Nadine Burak for

Vic Jaro, IAF Board Member

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Draft License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

INITIAL STATEMENT

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537

info@idahoaviationfoundation.org

November 18, 2019

BIG CREEK HYDROELECTRIC PROJECT

PROJECT No. P-10721

INITIAL STATEMENT

DRAFT LICENSE APPLICATION

November 18, 2019

1. The Idaho Aviation Foundation (IAF), a 501(c)(3) foundation in the city of Eagle, in the State of Idaho, also referred to herein as "IAF", hereby makes application to the Federal Energy Regulatory Commission (FERC) for a relicense/license for the Big Creek Hydroelectric Project (Project), FERC Project No. P-10721, as described hereinafter. The following license application has been prepared in accordance with Chapter 18 of the Code of Federal Regulations (CFR) Section 4.61, license for Minor Project (1.5 MW or Less) Water Power Project using the Traditional Licensing Process (TLP).
 - (a) Date Filed: November 18, 2019
 - (b) License Expiration Date: February 28, 2020
2. Location: The Project is located on McCorkle Creek in a remote mountainous region of central Idaho, 24 miles northeast of Yellow Pine in Valley County, Idaho. It lies totally within the Payette National Forest.
3. The exact name and address of the applicant is:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616-9110
Applicant's Phone Number: 208-859-5537
Applicant's Email Address: info@idahoaviationfoundation.org
4. Applicant Contacts and Authorized Agents:

Vic Jaro Board Member Idaho Aviation Foundation PO Box 2016 Eagle, Idaho 83316-9110 208-404-9627	Nadine Burak Secretary/Treasurer Idaho Aviation Foundation PO Box 2016 Eagle , Idaho 83616-9110 208-861-9056
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5. The applicant (IAF) is a 501(c)(3) non-profit foundation and is not claiming preference under section 7(a) of the Federal Power Act.

6. The statutory or regulatory requirements of the state in which the project is located that affect the Project as proposed with respect to bed and banks and the appropriation, diversion, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power and in any other business under the Federal Power Act are:

(a) All power generated by the project is consumed by Big Creek Lodge, a backcountry lodge owned and operated by the IAF. The lodge is located off-grid and on the edge of the Frank Church River of No Return Wilderness.

(b) Title 42 of the Idaho Code, which covers water use in the State of Idaho, is administered by the Idaho Department of Water Resources. The Project is authorized to use or occupy Forest Service Lands in the Payette National Forest subject to the terms and conditions of special use permit (SUP), Authorization ID: KBL202. The term of the SUP coincides with the Project license issued by FERC. The water right associated with the SUP is issued to the U.S. Department of Agriculture, Forest Services, as number 77-07334. This right is issued for use of 0.75 cfs from January 1 – December 31. With the authorized use of a designated water right through the SUP, the Project complies with the Title 42 requirement.

7. Brief project description:

The existing Big Creek hydroelectric generator system was originally constructed in 1968. The Project draws water from McCorkle Creek at a 2' wide X 3' long log diversion built into the banks of the creek. The penstock, which is 4" PVC, extends through the wall of the diversion approximately 2", and is 12" up from the diversion floor. A diversion check gate is used to build the water level in the diversion to above the penstock inlet, allowing flow through the system.

From late October through mid-May (off-season) the diversion check gate is removed, allowing 100% of stream flow to remain within the creek bed, dropping the water level passing through the diversion to well below the penstock inlet. The penstock inlet is sealed with plastic and clamps to prevent anything from entering the system during the off season and all water is drained from the line at the Generator House. In the late spring the penstock seal is removed, the check gate re-installed, and water once again fills the system.

Water flows through 1,340' of buried 4" PVC penstock to the generator house. A 4" isolation valve connects to the water inlet and needle flow control nozzle of the Canyon Hydro Pelton turbine and Marathon Magnaplas generator (The old Pelton wheel and generator were removed in 2015 and replaced with the new, high efficiency micro-hydro system just described. All work took place inside the Generator House). Turbine discharge water is returned to McCorkle Creek through an 18" corrugated tailrace. The nameplate capacity of the generator is 8 kW and for the Canyon Hydro turbine 5 kW. Actual operating capacity of the unit is approximately 1 – 5 kW.

The Generator House is a 10'x12' log structure with a metal covered gable roof to shed the winter snow. It is built on a concrete slab foundation and floor. A man door in the south wall provides access for people and equipment.

Electricity produced by the generator is sent to the lodge through approximately 350' of buried cable in 2" PVC conduit.

The Project is authorized to use National Forest Service lands in the Payette National Forest subject to the terms and conditions of a Special Use Permit, Authorization ID: KRL202. The permit covers the 0.4 acres that contains all the Project facilities described above.

A detailed Project description is provided in Exhibit A.

(a) proposed installed generating capacity is 8 kW.

(b) Existing 2' wide X 3' long in-bank diversion structure; no dam.

8. Lands of the United States affected (shown on Exhibit G)

	(Name)	(Acres)
(a) National Forest	Payette National Forest	0.42
(b) Indian Reservation		0.0
(c) Public Lands		0.0
(d) Other		0.0
(e) Total U.S. Lands		0.42

(f) The land is surveyed.

9. The Project is fully operational in its current configuration under the existing license. No construction is required.

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Preliminary License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

EXHIBIT A – PROJECT DESCRIPTION

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537
info@idahoaviationfoundation.org

November 18, 2019

(1)

18 CFR 6 4.61(c)(1)	Description
(a) The number of generating units, including auxiliary units	There will be one hydro generating unit in use. (Propane fueled 16 kW auxiliary/backup generator.)
The capacity of each unit	The nameplate capacity is 8 kW for the Marathon Magnaplug generator and 5 kW for the Canyon Hydro Pelton Turbine.
Provisions, if any, for future units	There are no provisions for future units.
(b) The type of each hydraulic turbine(s)	The turbine is a Canyon Hydro Pelton Turbine (5 kW, 200' head) driving a Marathon Magnaplug 8 kW generator.
(c) A description of how the plant is to be operated, manual or automatic	The plant is a manual system.
Whether the plant is to be used for peaking	The plant will not be used for peaking.
(d) The estimated average annual generation in kilowatt-hours or mechanical energy equivalent	Total energy production based on a 169 days operating season is estimated to be 12,168 – 16,201 kWh.
(e) The estimated average head on the plant	237 ft.
(f) The reservoir surface area in acres and, if known, the net and gross storage capacity	The steep gradient of McCorkle Creek does not produce a significant pooling behind the diversion. The diversion is approximately 5997' above mean sea level (MSL).
(g) The estimated minimum and maximum hydraulic capacity of the plant (flow through the plant) in cubic feet per second	The maximum hydraulic capacity is 0.5 cfs and the minimum hydraulic capacity is 0 cfs. The needle nozzle turbine flow control permits infinite flow adjustment, from 0 to maximum design flow. The flow versus power generation is nearly linear, so a flow of 0.1 cfs would generate approximately 1 kW; a flow of 0.5 cfs approximately 5 kW. A flow below 0.1 cfs still generates power but could restrict use of hydro to night time only, and utilizing the back-up propane generator during periods of higher electrical demand.
(h) Estimated average flow of the stream or water body at the plant or point of diversion	There is no good flow measurement data for the period of hydro plant operation. A study managed jointly by the US Forest Service and IAF will be conducted over several years beginning in 2020. A staff gauge has been installed in the stream bed above the diversion and a flowmeter on the inlet to the turbine to check flows and to allow management of stream flow below the diversion to be no less than 50% of total stream flow. The method is as follows: (1) Determine total stream flow in McCorkle Creek using the installed staff gauge. (2) Divide the measured flow by 2 to determine allowable flow to the Turbine. (3) Adjust the needle nozzle control on the turbine inlet until the

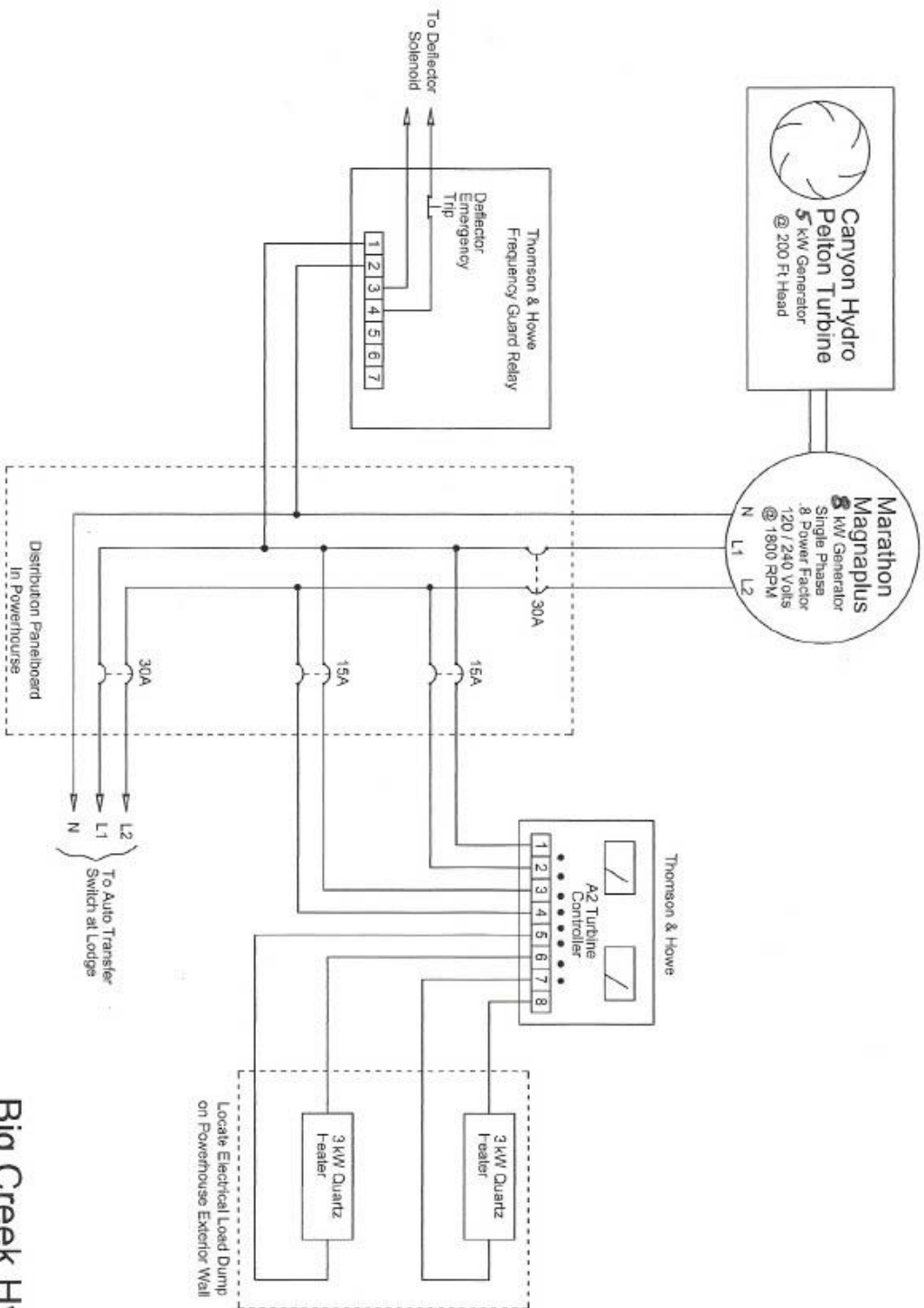
				ultrasonic flow meter indicates the proper flow. (4) The flow in the streambed will be the required 50% of total stream flow. Mean average flow is estimated to be 2 -3 cfs based on a StreamStats Flow Statistics Report dated April 13, 2017 provided by the US Forest Service. (See Attachment 1) The report shows flows from May through October to range from a high of 10.6 cfs to a low of 0.43 cfs. The McCorkle Creek flow study will provide actual numbers throughout the season, allowing mean average flow to be calculated each year, and a long term average mean over several years.	
Date Measured By	Location	cfs	50% for Power cfs	Estimated Power Production kW	
9/23/2015 FS	Above Diversion	0.27	.135	1.35	
7/24/2019 FS	Staff Gage Above Diversion	0.76	.38	3.8	
9/29/2019 FS	Staff Gage Above Diversion	0.41	.205	2.05	
(h) Sizes, capacities, and construction materials, as appropriate, of pipelines, ditches, flumes, canals, intake facilities, powerhouses, dams, transmission lines, and other appurtenances			<p><u>Diversion and penstock inlet:</u> The diversion is a log raceway, 2’wide x 3’long, built into the bank of McCorkle Creek. The 4” PVC penstock extends through the wall of the diversion approximately 2”; the penstock is 12” up from the floor of the diversion. A screened metal cover is attached to the side of the diversion and over the penstock inlet, and prevents debris (there are no game fish due to the steep creek gradient) from entering the penstock inlet.</p> <p><u>Penstock:</u> The 1340’ of 4” penstock is buried the entire distance to the Generator House except for the estimated last 15’; the grade allowing the pipe to move above ground and pass through the wall. A 4” water isolation valve connects to the water inlet and needle flow control nozzle of the Canyon Hydro Pelton turbine which drives the Marathon Magnaplug generator. The Hydro Generator unit is mounted on a steel frame that is bolted to the concrete floor of the Generator House. Water is discharged through an 18” corrugated tailrace and is returned to McCorkle Creek.</p> <p><u>Generator House:</u> The Generator House is a 10’ x 12’ log structure built on a concrete slab foundation and floor. There is a single manway door in the south facing 12’ wall that provides ingress, egress, and the means to move equipment in and out of the building. A metal paneled gabled roof makes the building weather tight and allows snow to slide off during the winter.</p>		

	<p><u>Generator:</u> Canyon Hydro Pelton Turbine (5 kW, 200' head) driving a Marathon Magnaplug 8 kW generator.</p> <p><u>Electrical:</u> Electricity is supplied approximately 350' to the lodge through wires buried in 2" PVC conduit.</p>
(i) The estimated cost of the project	The Big Creek Project was installed in 1968, so all infrastructure is in place. The IAF incurred cost for purchase and installation of the new turbine and generator was approximately \$50,000.
(j) The estimated capital costs and estimated annual operation and maintenance expense of each proposed environmental measure	Installation on the penstock of a Dynasonics ultrasonic flow meter and power supply for managing the instream flow in McCorkle Creek at no less than 50% of stream flow. Capital Cost: \$2500 Yearly Maintenance: \$100

(2) Purpose of project:

The Big Creek Project has and will continue to operate run of creek.

- (a) Big Creek Lodge is nearly at the end of the road from Yellow Pine, Idaho; only a short distance from the trailhead of the Frank Church River of No Return Wilderness (FCRNRW); literally on the edge of the wilderness. It is an off-grid facility. The Project supplies the electrical power to run the systems of the lodge such as lighting, potable water well pump, icemaker, coffeemaker, and other small loads.
- (b) Since major appliances (refrigerator, freezer, ranges, grills, and hot water heaters) are propane powered, the estimated 1 kW – 5 kW of renewable energy generating capacity of the newly installed high efficiency generator is adequate for Lodge electrical loads, reducing fossil fuel emissions. There is a backup propane fuel generator (16kW) that is used during periods of higher electrical demand.
- (3) An estimate of the cost to develop the license application is \$5,000 - \$10,000.
- (4) The on-peak and off-peak values of project power, and the basis for estimating the values.
This does not apply to this Project; the Project is run-of-creek.
- (5) The estimated average annual increase or decrease in project generation, and the estimated average annual increase or decrease of the value of project power due to a change in project operations. The power produced by the Project is impacted by the flow of water that can be diverted from the creek (50% of the available stream flow), which is driven by seasonal conditions that are outside the control of Project operations.
- (6) The remaining undepreciated net investment, or book value of the project: \$31,802.56
- (7) The annual operation and maintenance expenses, including insurance, and administrative and general costs: \$531.25
- (8) A detailed single-line electrical diagram:



Big Creek Hydro Plant Electrical Connections

(9) A statement of measures taken or planned to ensure safe management, operation, and maintenance of the project:

The Project has been operating for more than 27 years under the existing license. During this period, Commission staff has conducted periodic inspections focused on ensuring the Project operates within the terms of the license, and that the conditions of the Project structures and routine maintenance conducted on equipment and site continue to ensure the safety of the public. With the small size of the equipment (8 kW), the 0.42 acres included in the Special Use Permit, and the 2' X 3' in bank diversion of this Project, the risks to the public and operating personnel are very low. The following proposed measures will ensure the safe management, operation and maintenance of the Project.

- (a) Inspect and maintain the ATV access road from the Generator House to the diversion.
- (b) Monitor and clear as necessary to minimize the potential risk that hazard trees and other vegetation may pose to facilities, roads, operations, public safety, or personnel.

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Draft License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

EXHIBIT E – ENVIRONMENTAL REPORT

Prepared By:
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November 18, 2019

Environmental Assessment of the Big Creek Hydroelectric Project on the Payette National Forest

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Introduction and Purpose of the Analysis

(1) Affected Environments and Impact Assessment

- (a) Vegetative Cover
- (b) Fish and Wildlife Resources
- (c) Water Quality and Quantity
- (d) Land and Water Uses
- (e) Recreational Uses
- (f) Historical and Archeological Resources
- (g) Visual and Aesthetic Resources
- (h) Endangered or Threatened Plant and Animal Species and Critical Habitats
- (i) Sites Included in, or Eligible for Inclusion in, the National Register of Historic Places
- (j) Wilderness and Roadless Areas
- (k) Wild and Scenic Rivers
- (l) Geology and Soils
- (m) Wetlands
- (n) Air

(2) A Description of the expected environmental impacts resulting from the proposed construction or development of the Project, including any impacts from any proposed changes in capacity and mode of operation of the project if it is already generating electricity, and an explanation of the specific measures proposed by the applicant, the agencies consulted, and others to protect and enhance environmental resources and values and to mitigate adverse impacts of the project on them. (Even if there are no expected environmental impacts explain why.)

(3) Any additional information the applicant considers important.

(4) References Cited

Introduction to the Environmental Assessment

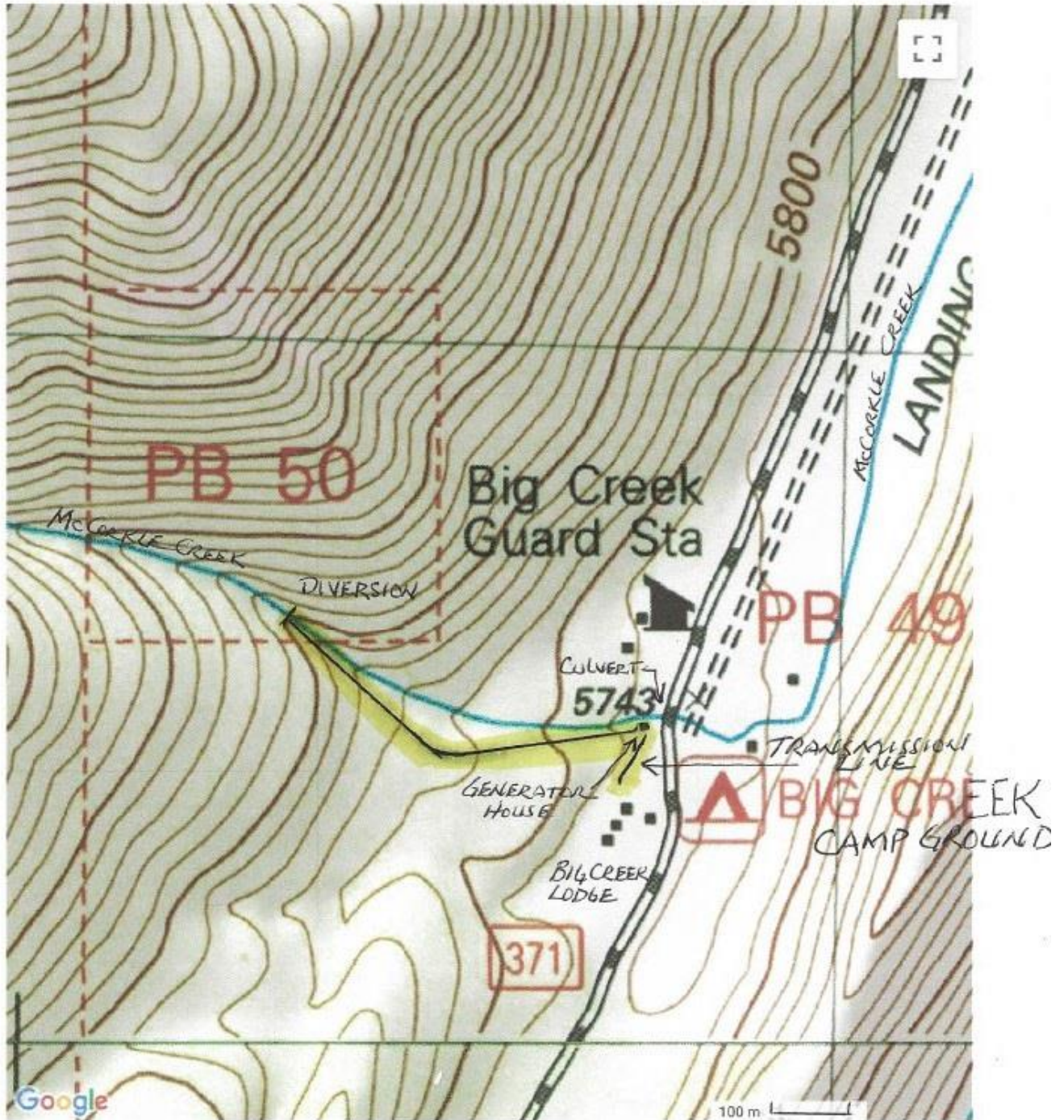
The purpose of this environmental analysis is to assess the impacts of the currently operating hydropower unit at Big Creek Lodge. McCorkle Creek, which supplies water to the project, is a tributary to Big Creek which is located in the high country of central Idaho. McCorkle Creek is about 3 feet wide just above the diversion and falls a steep 237' from the diversion to the Generator House, a 17.5% grade. The Big Creek Lodge is located on a flat, grassy clearing approximately 350' south of McCorkle Creek and the Generator House in the remote Big Creek Valley. Both McCorkle Creek and the lodge are within the PNF. A US Forest Service (USFS) work station is located near the lodge, across McCorkle Creek to the north. Big Creek eventually meets with the Middle Fork of the Salmon River.

Big Creek Lodge has been unique in being able to encourage public access to the beauty and recreational opportunities of the Big Creek Valley because of the airstrip and road access from Yellow Pine. It was expanded further when, in 1980, the 2.4 million acres River of No Return Wilderness area (renamed in 1984 for Idaho Senator Frank Church) was created by the United States Congress and provided the opportunity for a wilderness experience like few other places in America, and nowhere outside of Alaska.

The original hydropower project was constructed and began operation in 1968 and operated until 1985. After the lodge was sold to Big Creek Lodge and Outfitters, Inc. they applied for and were issued a minor license for a water power project on March 26, 1992; FERC Project No. P-10721-001. With the installation of a high efficiency turbo-generator in 2015 and 2016, a water diversion of 0.5 cfs generates up to 5 kW of electricity.

The analysis area in the following section includes the 0.4 acres of land in the Payette National Forest the Project is authorized to use per SUP KRL202 and additional areas in close proximity to the Project (diversion, penstock, Generator House, etc.). It extends beyond this stated analysis area where applicable (e.g.: Visual and Aesthetic).

Big Creek Topo Map in Valley County Idaho



TOP MAP SHOWING
APPROXIMATE PROJECT
LOCATION

APPROXIMATE
PROJECT BOUNDARY
~ 0.42 ACRES

Map provided by TopoZone.com

(1) Affected Environments and Impact Assessment

(a) Vegetative Cover:

The Big Creek Project is located in mixed conifer of Douglas fir, Sub-alpine fir and Lodgepole pine. In the mixed Coniferous Forest, the dominant species are the western red cedar, western hemlock, and Douglas fir. A Botanical Field Survey conducted by the Payette National Forest Botanist in September of 2012 around (at that time) the area of the proposed new lodge and some of the Project area and found no TES Plants or Habitat and no State Sensitive Plants. The Botanist indicated "A Study Request Is Not Needed; that numerous surveys in the past found no rare plants or communities near the Lodge or its waterline". The report stated that within the Project area it was dominated by PICO/VASC in uplands and ALSI along the riparian areas (Abbreviations from USDA Soil Conservation Service, 1999, Plants – Plants of the U.S. Alphabetical Listing, 954 pg.) A copy of the survey document is attached (See Attachment 2) and lists in more detail not only the dominant plant types, but the Vegetation Community Types and Associated Vegetation surveyed as well. Although no noxious weeds were noted in the survey at that time, today there are noxious weeds in the area bordering the Project near the Guard Station and in the area north of the FS Campground and along McCorkle Creek east of the airstrip. The following are the noxious weeds in the Area:

- (i) Guard Station: rush skeletonweed (a bad weed)
- (ii) North of Campground along the creek east of airstrip: yellow starthistle (another bad weed)
- (iii) In the area: spotted knapweed, Canada thistle, oxeye (white daisy)
- (iv) Other side of hogback: butter and eggs, tall buttercup, creeping buttercup

IAF will work with the Payette National Forest Invasive Species Specialist and develop inspection and chemical treatment procedures for Lodge personnel to assure noxious weeds do not become a problem in the Project and Lodge areas.

The Big Creek Project was installed in 1968 and operated continuously until the fire destroyed the lodge in 2008, with the exception of a seven years period from 1985 to 1992 when the Lodge changed ownership. The FERC license to operate the Big Creek Project was issued in March, 1992. The Project began operation again in late season 2018 when the reconstructed Lodge was completed, and a full season (mid-May through mid-October) in 2019. Given that this is an existing installation, it is not expected to have any significant impact on the general vegetation within the project boundaries.

(b) Fish and Wildlife Resources

Because most of this management area lies above 5,500' MSL the terrestrial and avian wildlife to be found are generally high elevation species. The shrub lands and forests provide big game summer range but are generally too high for winter range. There is abundant wildlife in the Big Creek Valley. Wildlife observations took place during the period mid-May through mid-October; the operating season for the Big Creek Hydroelectric Project.

The Project, per the FS Special Use Permit (ID-KRL202), occupies an area approximately 0.4 acres in size that begins at a 2' wide X 3' long X 2' high in-bank diversion, a 12' wide right of way for the

buried 1340' of 4" penstock and ATV access trail, a 20' X 22' footprint for the log generator house and a 10' wide X 350' long area for the buried electrical line from the generator house to the Big Creek Lodge. Therefore, given the very small and narrow Project footprint, wildlife observations are, for the most part, general to the Big Creek Valley, and not Project site specific. Mule deer have been observed both in the Project and general areas, and elk sign has been found on the trail to the diversion. Other wildlife observations (only those actually seen) general to the area:

Mule deer	Beaver
Elk	Northern River Otter
Black bear	American marten
Rocky Mountain gray wolf	Chipmunk
Moose	Red squirrel
Mountain lion	Columbian ground squirrel
Brook trout	Barn Swallow
Rainbow trout	Red fox
Cutthroat trout	Hummingbirds

Wolves: Management Area 13-PNF is in the Central Idaho Wolf Recovery Area as defined in the Northern Rocky Mountain Wolf Recovery Plan (US FWS 1987). Wolves inhabit the PNF which surrounds the Big Creek Lodge Project area. Based on habitat characteristics and land use relationships, Kaminski and Hansen (1984) identified key areas for wolves within the PNF. These areas are important year-round or seasonal habitat for elk, the primary prey species of the Rocky Mountain Gray Wolf. The Big Creek Project isn't located within any of these key areas. Wolves generally avoid sites of human activity. Kaminski and Hansen (1984) list sufficient space with minimal exposure to humans as a primary component of wolf habitat.

Re-licensing the Big Creek Project wouldn't likely affect gray wolves for the following reasons:

1. Since Big Creek Lodge has operated since 1934 and the community of Edwardsburg is close by, there is and has been human activity in and around the project site for a long time. Wolves would tend to avoid the area, but since wolves have been seen and heard, avoidance is not absence.
2. The Big Creek Project wouldn't alter existing habitat conditions.
3. The project area is not critical habitat for elk, thereby eliminating the main food source of wolves.

The entire area provides habitat for migratory land birds. Overall, terrestrial wildlife habitat is near properly functioning conditions in the high-elevation vegetation groups, but at low but increasing risk in the lower elevation groups due to insect or disease outbreaks or stand-replacing fire (USDA Forest Service 2013 and Big Creek Project (P-10721-001) license issued March 27, 1992).

The Upper Big Creek Watershed provides spawning and rearing habitat for Chinook salmon, steelhead trout, bull trout, and west slope cutthroat trout (USDA Forest Service 2003 pp III-258). Chinook salmon (a threatened species and Management Indicator Species (MIS)) were documented in Big Creek (Mallet 1974, Raleigh 1994, Forest Service 2002). No Chinook salmon were identified in Smith Creek (confluence of Smith Creek and Big Creek is approximately 2.1 miles downstream and the confluence of McCorkle and Big Creek is 1.02 miles downstream of the Generating House) but

the streams appear to provide good Chinook salmon habitat (Raleigh 1994). The analysis area is part of the Chinook salmon's critical habitat due to historical use. Chinook salmon are an important resource that may be cumulatively affected within the Big Creek Basin, but there are no Chinook salmon in McCorkle Creek. (The Payette National Forest (N.F.), The Golden Hand No. 3 and No. 4 Lode Mining Claims Proposed Plan of Operation: EIS)

Tributaries of the Middle Fork Salmon River provide principal rearing habitat for steelhead (a threatened species and MIS). Spawning habitat is found throughout the analysis area in the Big Creek, Smith Creek drainage. Steelhead have been documented in the upper Big Creek (Raleigh 1994), (Forest Service Surveys 1999, 2002). (The Payette National Forest (N.F.), The Golden Hand No. 3 and No. 4 Lode Mining Claims Proposed Plan of Operation: EIS)

Bull trout (a threatened species and MIS) have been documented in the analysis area in Big Creek..... (Raleigh 1994). Spawning Bull trout (fluvial and resident) were identified in Smith Creek below the confluence of the North Fork Smith Creek. Bull trout were also observed in lower North Fork Smith Creek (unpublished data on file, Payette National Forest, 2002). Critical habitat has been proposed but not designated by USFWS at this time. (The Payette National Forest (N.F.), The Golden Hand No. 3 and No. 4 Lode Mining Claims Proposed Plan of Operation: EIS)

According to a reference document from the Payette NF Program Fisheries Files with the subject "McCorkle Creek ESA Listed Species Presence/Absence, Flow Data", dated January 28, 2016 (See Attachment 3), it was long assumed by Payette National Forest (PNF) fisheries personnel that McCorkle Creek, which is a small tributary of upper Big Creek, was non-fish bearing upstream of the Big Creek road crossing (barrier culvert), 0.02 miles or 108' downstream of the Project Generator House. Three eDNA samples were taken by PNF personnel in the summer of 2015 to confirm the presence/absence of ESA listed fish species in McCorkle Creek; one from above the culvert, one from below the culvert at the Big Creek Road, and one from above the diversions higher in the system. Fish species tested for at all three sites included rainbow trout, westslope cutthroat trout, brook trout, and bull trout. PNF fisheries personnel electrofished extensively throughout where the eDNA samples had been taken. The same areas that were electrofished were also snorkeled earlier in the year (C. Zurstadt, East Zone Fisheries Biologist, personal communication).

The most downstream eDNA sample near the airstrip irrigation pond (approximately 0.62 miles downstream from the Generator House) detected only brook trout. No eDNA was detected in the two samples upstream of the road crossing. During the electrofishing survey, one brook trout was captured near the irrigation pond (irrigation pond for watering the airstrip). No ESA listed fish species were captured via electrofishing (data on file Krassel RD). The snorkel survey also returned negative results with no fish observed. The extensive efforts of 2015 showed no presence of ESA listed fish and no game fish above the barrier culvert in the Project area. Therefore, the re-license of the Big Creek Project would have no identifiable impact on Chinook salmon, other ESA listed fish, or other game species.

McCorkle Creek is a tributary stream and can be considered as influencing the water quality and quantity of aquatic habitat downstream in the Big Creek watershed, but this hydro project does not affect downstream water quantity due to run-of-river operation and an absolutely minimal effect on quality due to the absence of a reservoir.

(c) Water Quality and Quantity

McCorkle Creek is a tributary to Big Creek. A TOPO map following this Water Quality and Quantity section shows McCorkle Creek, Big Creek, and the confluence 1.03 miles downstream of the Project Generator House. Extensive searches reveal no water quality data for McCorkle Creek. However, run-off from winter snow in the drainage and springs are two significant and high quality contributors to total stream flow. The creek has been used as a source of drinking water in the past; the FS Guard Station at Big Creek draws its' water for drinking and compound irrigation from a spring located above the Big Creek Project diversion, and returns the excess spring water to McCorkle Creek below the Project diversion. Since there is no other type of development in the watershed of this small mountain creek, it is assumed water quality is good to excellent.

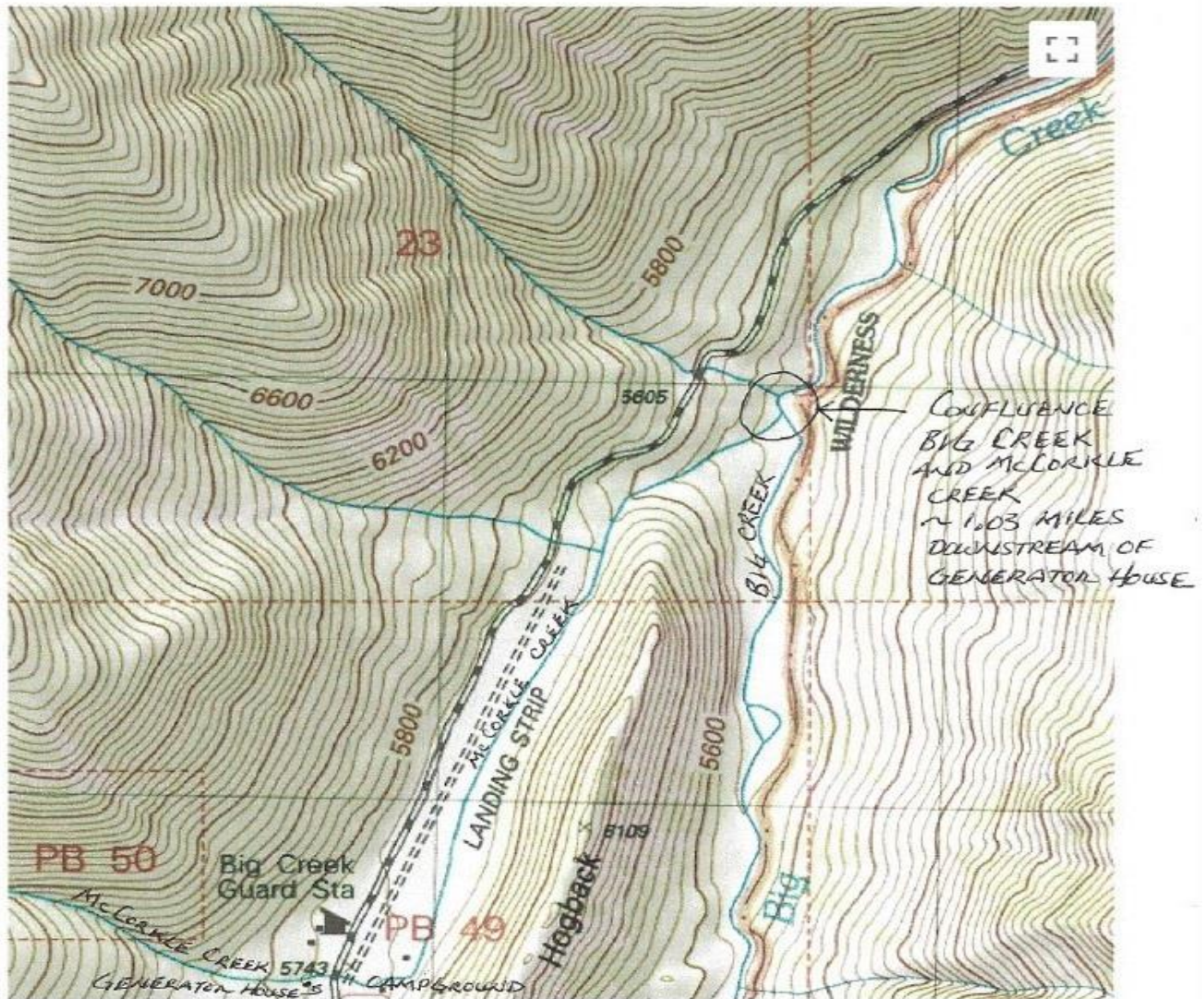
There is no good flow measurement data for the period of hydro plant operation. A study managed jointly by the US Forest Service and IAF will be conducted over several years beginning in 2020. A staff gauge has been installed in the stream bed above the diversion and a flow meter on the inlet to the turbine to check flows and to allow management of stream flow below the diversion to be no less than 50% of total stream flow. The method is as follows: (1) Determine total stream flow in McCorkle Creek using the installed staff gauge. (2) Divide the measured flow by 2 to determine allowable flow to the Pelton turbine. (3) Adjust the needle nozzle control on the turbine inlet until the ultrasonic flow meter indicates the proper flow. (4) The flow in the streambed will be the required 50% of total stream flow. Mean average flow is estimated to be 2 -3 cfs based on a StreamStats Flow Statistics Report dated April 13, 2017 provided by the US Forest Service (See Attachment 1). The report shows flows from May through October to range from a high of 10.6 cfs to a low of 0.43 cfs. A chart below documents flows and dates measured at the staff gage location. The McCorkle Creek flow study will provide actual numbers throughout the season, allowing mean average flow to be calculated each year and a long-term average mean over several years.

The total water diverted for hydroelectric generation is limited to 0.75 cfs during the seasonal operation (May-October) of the Big Creek Lodge. The water right for this use is issued to the U.S. Department of Agriculture, Forest Service, as number 77-07334, and licensee is authorized to use via special use permit ID: KRL202. Although the water right designated for generation is 0.75 cfs, the expected quantity to actually be used is 0.5 cfs or less. Water used for power generation is a non-consumptive use and is returned with a de minimis impact (the Pelton wheel turbine bearings are mounted external to the turbine casing) to quality and no reduction in quantity (non-consumptive) to the creek bed 1340' downstream from where it was drawn. Since no more than half of any flow present is allowed for generation and FS excess spring flow is returned to McCorkle below the diversion, effects to biological resources of the creek will be reduced.

Actual McCorkle Creek Stream Flow Measurements at the Staff Gage

<u>Date</u>	<u>Location</u>	<u>cfs</u>	<u>50% cfs for Power</u>	<u>Estimated Power Production (kW)</u>
9/23/2015 FS	Above Diversion	0.27	.135	1.35
7/24/2019 FS	Staff Gage Above Diversion	0.76	.38	3.80
9/29/2019 FS	Staff Gage Above Diversion	0.41	.205	2.05

Big Creek Topo Map in Valley County Idaho

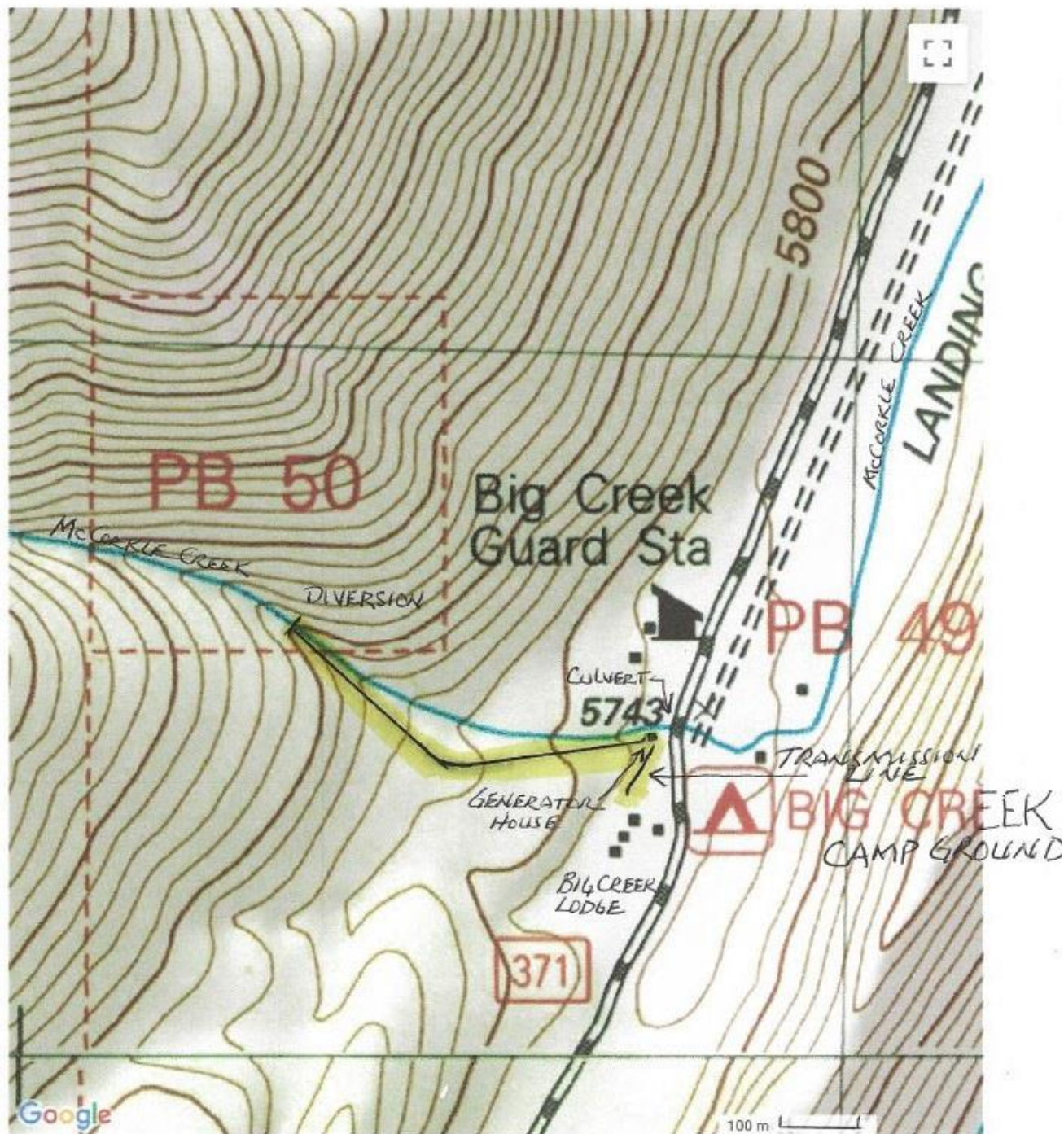


200 m

TOPO MAP SHOWING MCCORKLE CREEK AND BIG CREEK CONFLUENCE IN
RELATION TO PROJECT

Map provided by TopoZone.com

Big Creek Topo Map in Valley County Idaho



TOPO MAP SHOWING
APPROXIMATE PROJECT
LOCATION

APPROXIMATE
PROJECT BOUNDARY
~ 0.42 ACRES

Map provided by TopoZone.com

(d) Land Use

The Big Creek Project is managed as Forest Management Area 13 - Big Creek/Stibnite - in the PNF Land and Resource Management Plan (2003). The primary uses and activities in this management area have been mining, dispersed recreation, and watershed restoration.

Big Creek lies within the Management Prescription Category (MPC)/Resource Area 3.2, which in addition to Forest-wide Goals, Objectives, Standards, and Guidelines that provide guidance for all management areas, the guidance for this area is “Active Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources” (USDA Forest Service 2003, pp. III-256).

This area is adjacent to, but has been excluded from, the FCRNRW because of past mining activity and current mining potential. Land in the project vicinity, along the Big Creek Valley, is used for high country recreation, irrigated pastures, and managed forest and wilderness.

The main access routes to the Big Creek area are the native-surfaced Big Creek Road from Yellow Pine through Profile Gap, or Forest Road 340, from Warren, which are usually open from July through early November. A public access airstrip at Big Creek also serves local landowners and recreationists.

The Project is consistent with other uses in this area.

(e) Recreation:

The Idaho Statewide Comprehensive Outdoor Recreation Plan 2018 (SCORP) is produced by the Idaho Department of Parks and Recreation in order to provide an overarching document to guide outdoor recreation in Idaho for the next five years. The Idaho SCORP provides a contemporary assessment of the outdoor recreation system in Idaho, from detailing providers and supply, to understanding the demand and needs, and identifying issues impacting outdoor recreation throughout the state.

Some of the issues and recommendations identified and how Big Creek Lodge and its hydroelectric project contributes to satisfying the concerns specifically in the Big Creek Valley are as follows:

(i) Access

In regards to the plan, “access” refers to the overall availability of a recreational opportunity. Idaho must continue to provide access to opportunities for its citizens and visitors.

When the fire in October of 2008 burned the historic Big Creek Lodge and a cabin to the ground, a unique chance to experience the beautiful and majestic Idaho backcountry was lost to Idahoans and visitors alike; people lost the “availability of a recreational opportunity.” With the rebuilding of the Lodge/Project in late season 2018, access to a magnificent backcountry lodge and the recreational opportunities that are in the Big Creek valley have been restored.

(ii) Experience

Beyond the provision of facilities and management of land, recreation providers also facilitate participation for Idaho's citizens and visitors. Recreation providers should continue to improve and provide facilities and programs available to all people, regardless of physical or mental disabilities.

The IAF has provided and improved facilities for Idaho's citizens. The Lodge is both beautiful and functional with four rooms available to the public, one being designed to be handicap accessible, a large commercial kitchen, an eating area, and a lodge area.

(iii) Stewardship

It is important that current and future generations understand the value and benefits of the state's natural, cultural, and historic resources.

The IAF placed very high value on protecting access to the Lodge/Project for future Idahoans and future visitors. The thirty years lease with the Forest Service for the Lodge site states that the Lodge must always remain open and accessible to the general public.

Guests are encouraged to take advantage of some of the many things to do in the vicinity of the Lodge/Project, including being aware of the culture and history of the area. In addition to the reference materials available at the Lodge, day hikes to historical sites have been designed to show guests where to go and what they will see when they get there. These hikes make for a pleasant and educational day in the beautiful outdoors.

Idaho Fish and Game enables Idahoans' rights to hunt, fish, and trap – an essential component of Idaho's outdoor heritage, and meet the demand for hunting, fishing, trapping, and other outdoor recreation. The Lodge/Project has and does serve as a very comfortable base of operations for big game hunts in the area of Big Creek or can provide meals and showers to hunters. The hunts are very popular with both residents and nonresidents and support Idaho's outdoor heritage.

Idaho multi-use trails not only provide opportunities for off-highway motorized recreation on all-terrain vehicles, utility type vehicles, and motorcycles, but also support non-motorized access for equestrian use, mountain biking, hiking, hunting, fishing, photography, or just plain walking to enjoy the amazing scenery that Idaho has to offer.

Many of Idaho's backcountry lodges are only accessible by horseback, boat, and airplane, making them difficult to impossible for the average person to get in to. Big Creek Lodge/Project is somewhat unique because, although it sits on the very edge of the Frank Church River of No Return Wilderness and off the grid, the Big Creek Road allows motorized vehicles (ATV, Four Wheelers, Motorcycles, cars/trucks), non-motorized (horses), in addition to backcountry airplane access. The reconstructed Lodge/Project being back in the Big Creek valley encourages people to travel into Big Creek to recreate. Another observation of the SCORP is the State's changing demographics; a higher percentage of the population is getting older and to some degree responsible for the increasing popularity of motorized vehicles to gain backcountry

access.

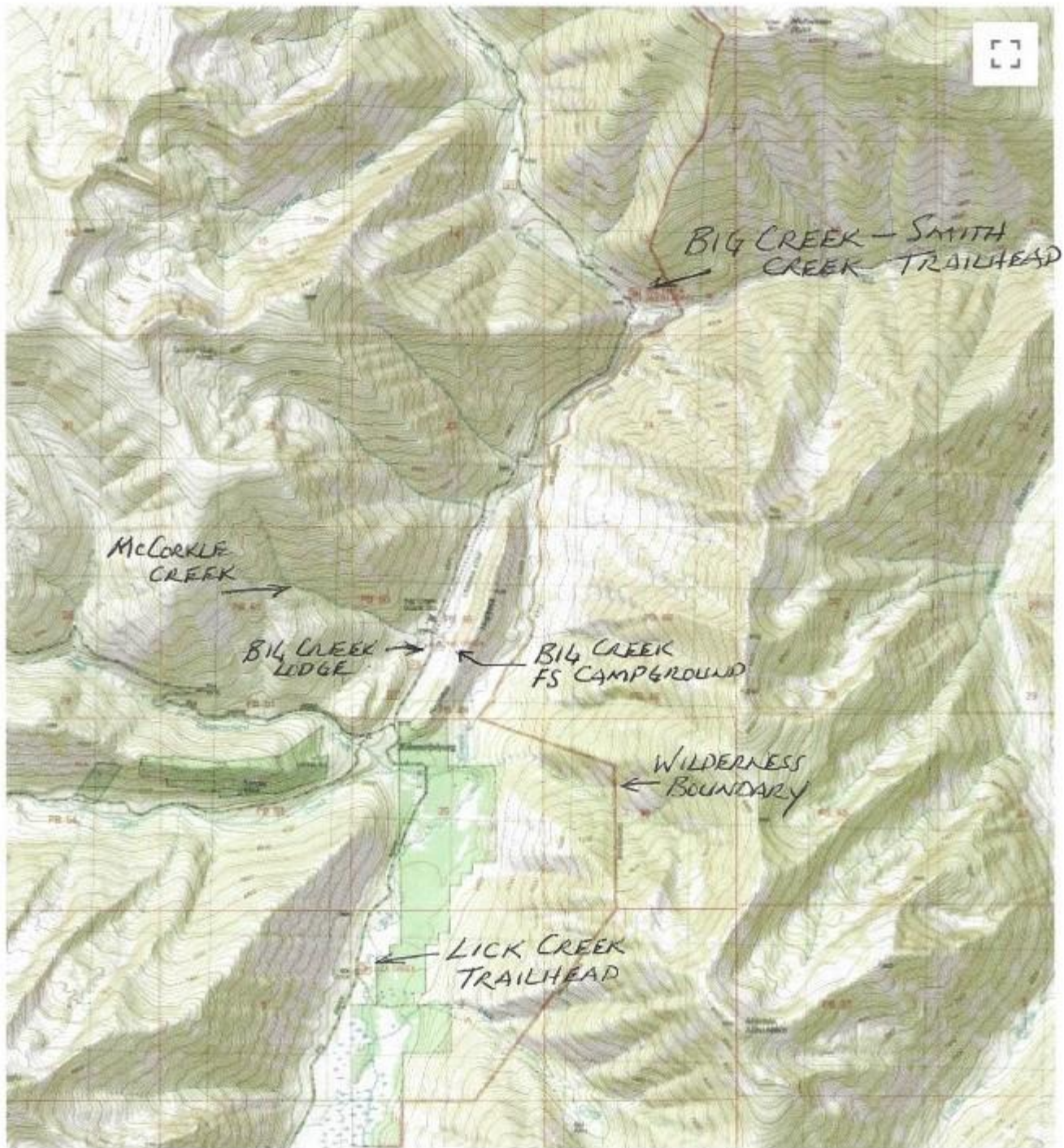
The types of recreation supported by the Lodge/Project are the following: Hiking (trails (Lick Creek Trailhead 1.81 miles south of Generator House, Big Creek/Smith Creek Trailhead 2.19 miles north of Generator House) and day hikes), excursions into the wilderness area, camping (including FS Campground located 0.04 miles downstream of the project Generator House on McCorkle Creek), mountain biking (bikes supplied by the Lodge or BYO), hunting, fishing, photography (landscape and wildlife), view wildlife, hikes to historical sites, trail riding (horses), flying (Big Creek airstrip), ATV/4 wheeler/motorcycle riding.

Pertinent facts from Lodge/Project operation June-September, 2019:

- Guests came from 20+ states, Europe, and Canada
- Overnight guests: 450
- Meals Served: 1800
- Source of transport to the Lodge/Project ~70% Airplane, a few by horseback, rest by ground transportation (majority recreationists on ATV/4 wheelers)
- Guest nights: 1860

The remainder of the management area receives low to moderate dispersed use associated mainly with the Big Creek/Edwardsburg area, Missouri Ridge and Monumental Creek trails into the Wilderness, high mountain lakes in the upper Profile Creek drainage, and now use driven by the reconstructed Big Creek Lodge. Users come through the area from all over the country to use the adjacent Wilderness, especially during big game hunting seasons. The area is in Idaho Fish and Game Management Units 25 and 26 (USDA Forest Service 2003, pp. III-261)

Big Creek Topo Map in Valley County Idaho

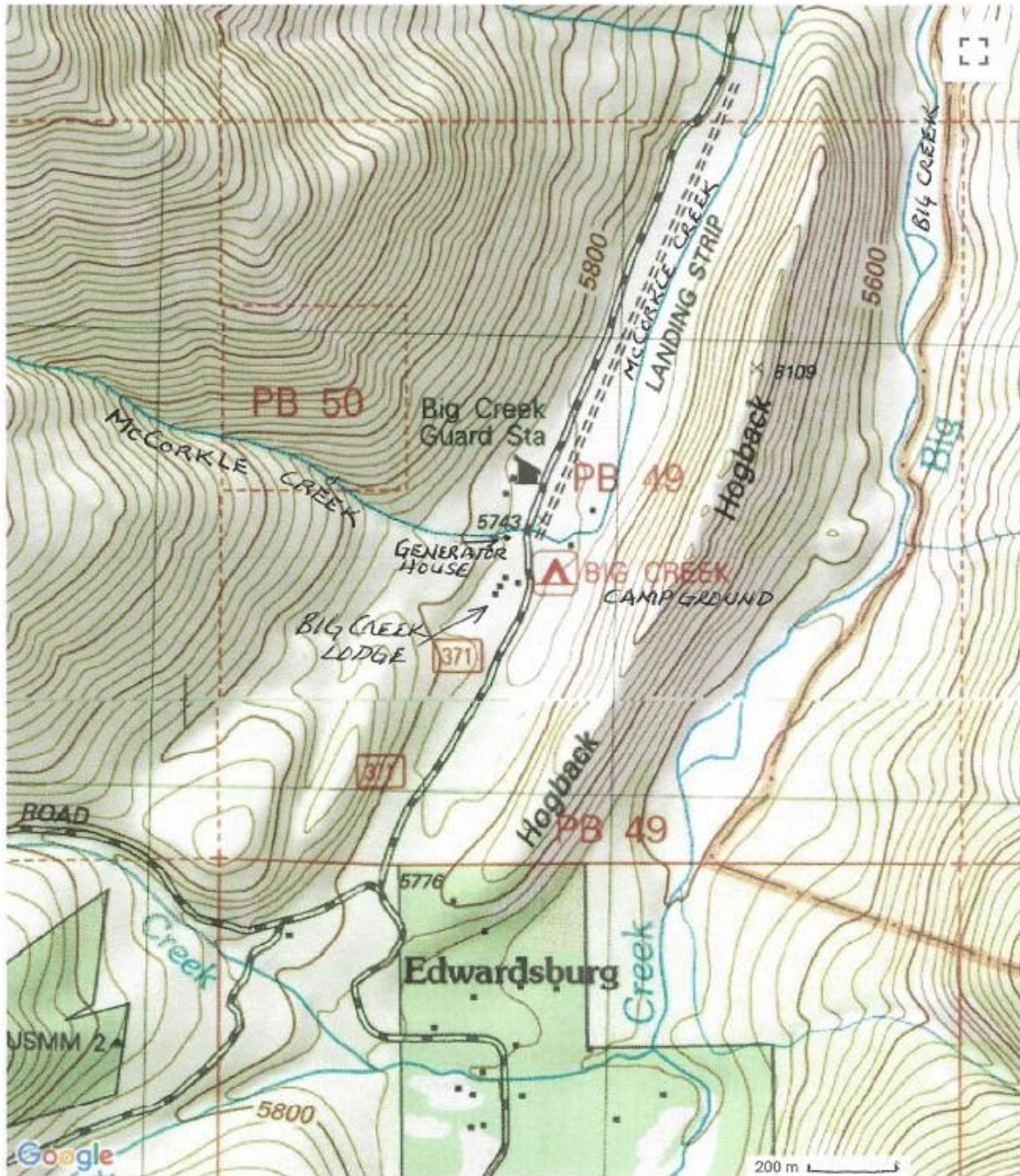


RECREATION MAP - TRAILHEADS AND
TOPO CAMPGROUND - VICINITY
OF PROJECT

1 km

Map provided by TopoZone.com

Big Creek Topo Map in Valley County Idaho



TOPO MAP SHOWING LOCATION OF FS BIG CREEK CAMPGROUND
IN RELATION TO
PROJECT.

Map provided by TopoZone.com

Site Map

Payette National Forest

Home

Special Places

Recreation

Bicycling

Camping & Cabins

Fishing

Hiking

Horse Riding & Camping

Hunting

Nature Viewing

OHV Riding & Camping

Outdoor Learning

Picnicking

Water Activities

Winter Sports

Alerts & Notices

Passes & Permits

Maps & Publications

Land & Resources Management

Learning Center

Working Together

About the Forest

Big Creek Campground

Area Status: Closed



Located next to the Big Creek airstrip this four unit campground offers a good staging place to access the Frank Church Wilderness of No Return. It is popular with pilots camping overnight in Big Creek. The campground is near the Big Creek Work Station. Trailhead access to the Frank Church River of No Return Wilderness to the north on FR 371. Fishing in Big Creek. Facilities include an accessible toilet and drinking water. Pack in/pack out. No hook-ups.

At a Glance

Fees	\$10 single units.
Usage:	Light
Closest Towns:	Yellow Pine, ID
Water:	yes
Restroom:	Vault Toilet (1)
Operated By:	Forest Service

General Information

Directions:

From Yellow Pine, go 18 miles northeast on Forest Road 412, FR 340, and FR 371. Eighty-six miles northeast of McCall on Big Creek Road (#371).

Recreation Map



Fire Danger TODAY



West - Payette National Forest

LOW

East - Payette National Forest

LOW

Payette Fire Information

Related Information

Big Creek Campground

Seasonal Information

Areas & Activities

Find An Area

Location

Latitude : 45.1275744

Longitude : -115.32313

Elevation : 5750

News & Events

Contact Information

Payette National Forest
500 N Mission St Building 2
McCall, ID 83638
(208) 634-0700

Contact Us

Map showing recreational areas. **Map Information**

BIG CREEK CAMPGROUND



Esri, NASA, NGA, USGS, FEMA | The USDA Forest Service makes no warranty, expressed or implied, inc... Powered by Esri

Activities

Camping & Cabins
Campground Camping

☐ HIDE

No. of Sites	4 single site(s)
Reservation Info	Not reservable
No. of Accessible sites	None

Site Map

Payette National Forest

Home

Special Places

Recreation

Bicycling
Camping & Cabins
Fishing
Hiking
Horse Riding & Camping
Hunting
Nature Viewing
OHV Riding & Camping
Outdoor Learning
Picnicking
Water Activities
Winter Sports

Alerts & Notices
Passes & Permits
Maps & Publications
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About the Forest
News & Events

Contact Information

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500 N Mission St Building 2
McCall, ID 83638
(208) 634-0700

Contact Us

LICK CREEK TRAILHEAD

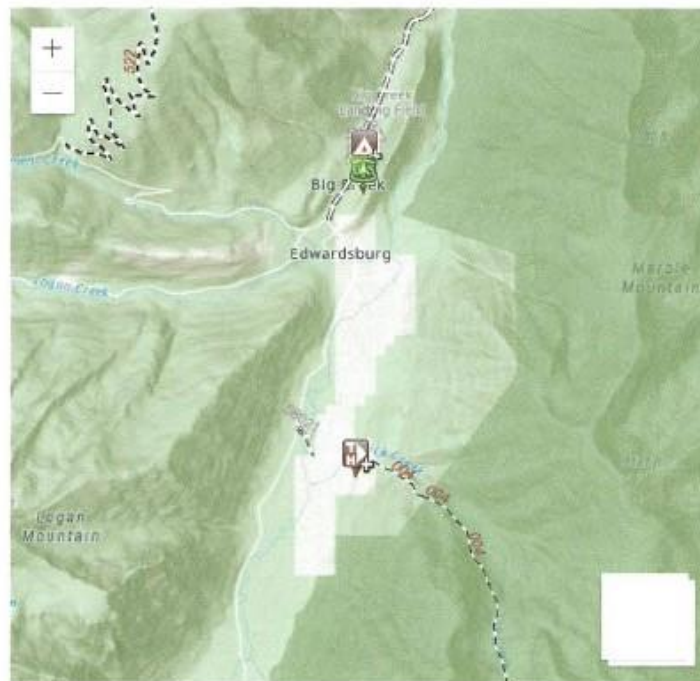
Lick Creek Trailhead

Information coming soon
At a Glance

Usage:	Light
Closest Towns:	Forest Service
Water:	No
Restroom:	Vault Toilet (1)

Recreation Map

Map showing recreational areas. **Map Information**



Est. NASA, NGA, USGS, FEMA | The USDA Forest Service makes no warranty, expressed or implied, in: Drawn by Esri

Activities

Hiking

Day Hiking

Recreation areas with activity Day Hiking:

Cougar Basin Trail #004

HIDE

Horse Riding & Camping

SHOW

Fire Danger TODAY



West - Payette National Forest
LOW

East - Payette National Forest
LOW

Payette Fire Information

Areas & Activities

Find An Area

Location

Latitude : 45.100096
Longitude : -115.32434

BIG CREEK - SMITH CREEK TRAILHEAD

Big Creek/Smith Creek Trailhead

Site Map

[Payette National Forest](#)

Home

Special Places

Recreation

[Bicycling](#)
[Camping & Cabins](#)
[Fishing](#)
[Hiking](#)
[Horse Riding & Camping](#)
[Hunting](#)
[Nature Viewing](#)
[OHV Riding & Camping](#)
[Outdoor Learning](#)
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[Water Activities](#)
[Winter Sports](#)

[Alerts & Notices](#)
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Contact Information

Payette National Forest
500 N Mission St Building 2
McCall, ID 83638
(208) 634-0700

[Contact Us](#)

This trailhead is located just past the Big Creek Station, and is a major access point for the Frank Church River of No Return Wilderness. Access to Big Creek for recreational boating.

At a Glance

Usage:	Light
Restrictions:	Trail enters FCRONR Wilderness, no motorized, no mechanized travel allowed
Closest Towns:	Forest Service
Water:	No
Restroom:	yes

Recreation Map

Map showing recreational areas. [Map Information](#)



Cart. NASA, NGA, USGS, FEMA | The USDA Forest Service makes no warranty, expressed or implied, inc.... Powered by Esri

Activities

Fire Danger TODAY



West - Payette National Forest
LOW

East - Payette National Forest
LOW

[Payette Fire Information](#)

Quick Links

[Alerts & Notices](#)
[Frequently Asked Recreation Questions](#)
[Federal Lands Recreation Enhancement Act](#)

Areas & Activities

[Find An Area](#)

Highlights

[OHV Unlicensed Rider Education Requirements](#)

Location

Latitude : 45.1536868
Longitude : -115.30258



Payette Avalanche Center
Advisories Serve All

(f) Historical and Archeological Resources

Long before the Big Creek Lodge was built the Big Creek drainage attracted hundreds of miners and ranchers to the area. Edwardsburg was established in 1904 near the present-day airstrip, and with a general store and post office became the center of commerce.

The USFS established a ranger station at Big Creek in 1920. About a decade later brave pilots began using the adjacent pasture as a landing field. Big Creek Lodge was built in the mid-1930's, and along with a general store and gas station, provided a sanctuary for all those headed upstream or downstream. The road from Yellow Pine over Profile Summit was completed in 1933, which greatly improved access to the Big Creek Valley when compared to the difficult 40 miles route from Warren.

In 1957 the airstrip was completely rebuilt and extended to the current length of nearly 3,600'. The USFS continued to operate the airstrip until 1961, when it issued a special use permit to the Idaho Department of Aeronautics. Now the Idaho Division of Aeronautics, the state continues to manage and maintain the airstrip.

Big Creek Lodge has been unique in being able to encourage public access to the beauty and recreational opportunities of the Big Creek Valley because of the airstrip and road access from Yellow Pine. It was expanded further when, in 1980, the 2.4 million acres River of No Return Wilderness area (renamed in 1984 for Idaho Senator Frank Church) was created by the United States Congress and provided the opportunity for a wilderness experience like few other places in America, and nowhere outside of Alaska.

Unfortunately, all this came to an end when, in October of 2008, just as the lodge was being shut down for the season, fire erupted and burned the lodge and a nearby cabin to the ground. The IAF, after renewing a special use permit (SUP) from the USFS in May 2013, began rebuilding the lodge in 2015; a beautiful log structure with five rooms and a commercial kitchen to feed and house tired and hungry recreationalists once again. The lodge was completed in August of 2018.

The Big Creek Hydroelectric Project has received a National Historic Preservation Act (NHPA), Section 106 review (See Attachment 4) (SHPO Review No.: 2018-342) which found the Project actions would result in no historic properties affected (36 CFR 800.4(d)).

In the event that cultural material is inadvertently encountered during the implementation of the Project, work will be halted in the vicinity of the finds until they can be inspected and assessed by the appropriate consulting parties.

(g) Scenic and Aesthetic resources

The Big Creek Lodge lies in a scenic valley at the west edge of a green, willow and conifer-ringed meadow. The steep mountain slopes of the valley are covered with fir and pine forests. The lodge is located just south of the Big Creek airstrip at 5743 feet above MSL. The hydropower diversion is up a steep grade to the west of the lodge site, and since it is built into the bank of McCorkle Creek

and slightly off the trail, it is difficult to see. The 4" PVC penstock is buried the entire 1340' down the hill to the Generator House where it rises above grade and enters through the west wall to supply the turbine. The penstock is not visible from the trail. The Generator House sits to the north end of the lodge site, is made of log construction with a metal roof, and is visible from within and without the lodge property boundaries (the log construction is aesthetically pleasing and consistent with the log construction generally found in the area). The power line is buried in conduit the entire distance to the lodge electrical panel.

Those who years ago installed the Project took care to assure the aesthetics of the area were not compromised by Project facilities.

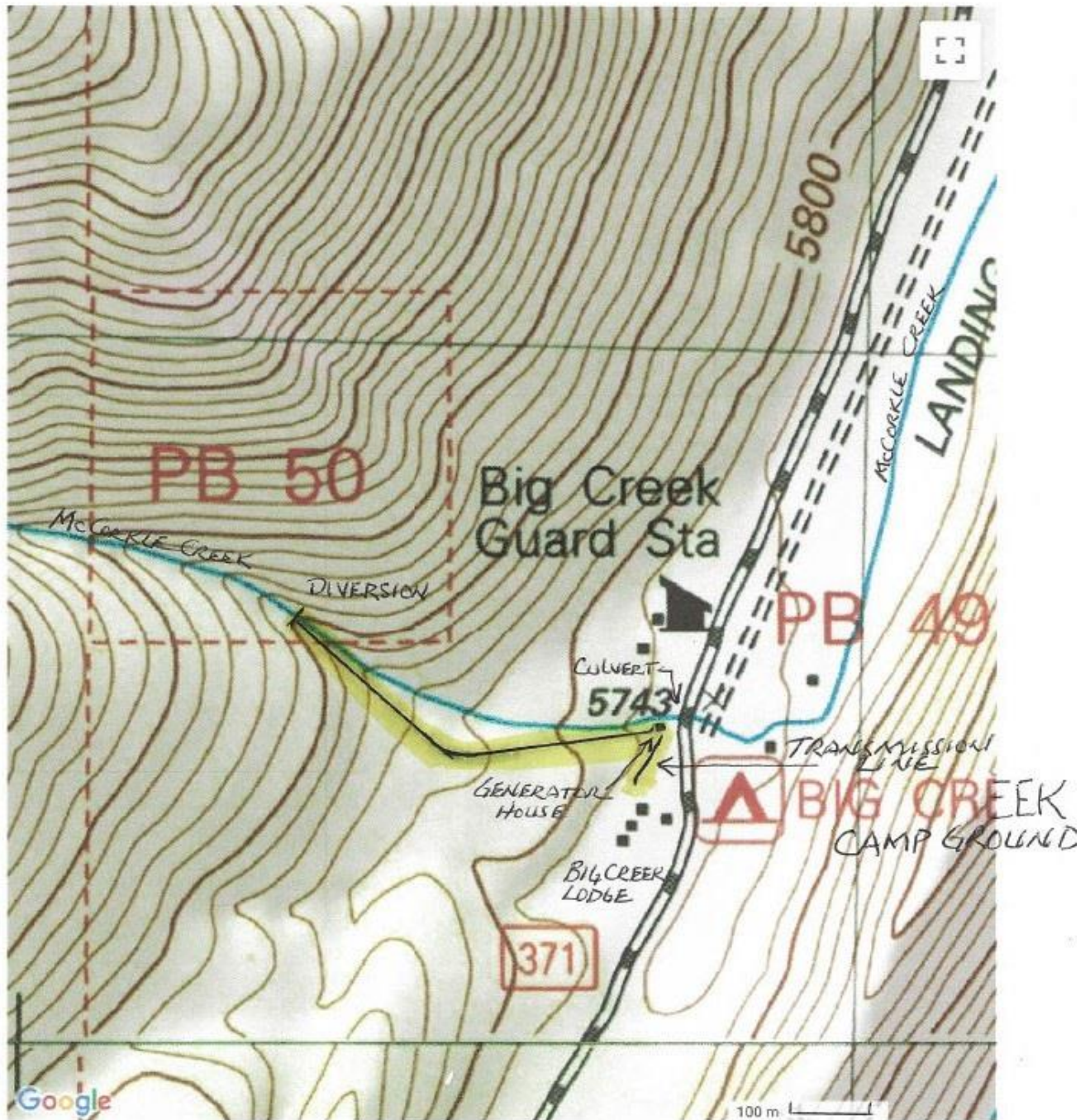
(h) Threatened, Endangered, and Sensitive Species

This section addresses potential effects of the Big Creek Project on federally endangered and threatened species, and Region 4 sensitive species (TE&S) that may occur in or nearby the project boundaries. Federally endangered and threatened species are those listed by the FWS under section 4 of the Endangered Species Act (ESA). The Region 4 sensitive species list is a USFS regional list that includes species ranked in the Federal Register as FWS candidate species or ranked by the Nature Conservancy as G1(globally imperiled), G2 (locally imperiled), or G3(rare).

The objectives of the FS sensitive species program are to develop and implement management practices to insure that species do not become threatened or endangered because of FS actions (FSM2670.22-1), and to maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on FS lands (FSM 2670.22-2).

A document entitled "Intermountain Region (R4) Threatened, Endangered, Proposed, and Sensitive Species, June 2106, Known/Suspected Distribution by Forest" is attached below in section for information. Forest identifier "PAY", indicating the Payette National Forest, is the forest of note for the Big Creek Lodge and Big Creek Project. As recorded previously in this document, a US Department of Agriculture, Forest Service, Resort/Marina Term Special Use Permit for 30 years was issued by the FS on May 31, 2013 to the IAF for Big Creek Lodge, excluding the hydroelectric system. The operation and maintenance of the Big Creek Hydropower Project (P-10721) is authorized under US Forest Service Special Use Permit KRL202, and includes the 0.4 acres on which the facilities and equipment of the Project are located. This permit expires on 02/28/2022. On page 5, paragraph F, Protection of Habitat of Endangered, Threatened, and Sensitive Species of the Project authorizing Permit specifies that the permit holder shall be responsible for protective and mitigative measures specified by the authorized officer. It further states that if protective measures prove inadequate, if other such areas are discovered, or if new species are listed as federally threatened or endangered or as sensitive by the Regional Forester, the authorized officer may specify additional protection regardless of when such facts become known. Discovery of such areas by either party are to be promptly reported to the other party.

Big Creek Topo Map in Valley County Idaho



TOP MAP SHOWING
APPROXIMATE PROJECT
LOCATION

Map provided by TopoZone.com

APPROXIMATE
PROJECT BOUNDARY
~ 0.42 ACRES

Location of areas needing special measures for protection of plants or animals listed as threatened or endangered under the ESA of 1973, 16 U.S.C.531 et seq., as amended, or as sensitive by the Regional Forester under authority of FSM 2670, derived from ESA Section 7, Consultation, may be shown on a separate map, and made a part of the permit, or identified on the ground. No such map was included as part of the permit, and there have been no areas “identified on the ground”.

The U.S. Fish and Wildlife Service, ECOS report “Listed Species Believed to or Known to Occur in Idaho” lists 15 listed species. Five that potentially could fall near the Project site are reviewed in more detail.

- (i) Grizzly Bear
- (ii) Woodland Selkirk Mountain Caribou
- (iii) Canada Lynx
- (iv) Northern Idaho Ground Squirrel
- (v) Bull Trout

In addition, the Idaho State Wildlife Action Plan prepared by the U.S. Fish and Wildlife Service, for one of the regions, Challis Volcanus Section which includes Big Creek in its most northern area, determined that the wolverine faces special conservation needs and will be reviewed further.

- (vi) North American Wolverine

Two additional anadromous fish species that have or have had a presence in the Big Creek drainage will be presented.

- (vii) Steelhead
- (viii) Chinook

(i) Grizzly Bear

Grizzly bears were listed as a threatened species in 1975 in the conterminous 48 States. It is illegal to harm, harass, or kill these bears, except in cases of self-defense or the defense of others.

There are six recovery ecosystems for grizzly bears in the lower-48 states today: the Greater Yellowstone Ecosystem, the Northern Continental Divide Ecosystem, the Cabinet-Yaak Ecosystem, the Selkirk Ecosystem, the North Cascades Ecosystem, and the Bitterroot Ecosystem (contained in Bonneville, Clark, Fremont, Madison, and Teton counties). The North Cascades Ecosystem contains no confirmed grizzly bears in the United States, and an estimated six individuals reside in the adjacent British Columbia portion of the ecosystem. The Bitterroot Ecosystem is unique among the six in that it currently has no known bears present. Despite numerous studies of this area, there were no verifiable sightings of grizzly bears in the last 60 years until an adult male grizzly bear was mistakenly killed by a black bear hunter in September 2007 in the northern mountains of the Bitterroot. The bear originated from the Selkirk area northwest of the St. Joe Ranger District, and although the route this bear took between the Selkirk area and where it was shot is not known, one possible route would have been the Bitterroot Divide along the Idaho/Montana border. Based on the negative results from camera and hair snare surveys in 2008 and 2009 and the lack of any recent verified sightings of grizzly bears, there is no reason to believe that there are resident populations of this species in the BE. (Interagency

Grizzly Bear Committee 2007) The BE provides suitable bear habitat. It is one of the largest contiguous blocks of Federal land remaining in the lower 48 United States. The core of the BE contains the Selway-Bitterroot Wilderness and Frank Church – River of No Return Wilderness. Together these two wilderness areas make up the largest block of wilderness habitat in the Rocky Mountains. These six ecosystems, each containing a recovery zone, were identified in the Grizzly Bear Recovery Plan and thought to support grizzly bears at the time of listing.

Recovery of grizzly bears in the BE through natural recolonization is considered a remote possibility because of the lack of movement or dispersal by grizzly bears in the northern Rocky Mountains. Therefore, grizzly bear recovery will require reintroduction of bears from other areas.

(Information from the “Grizzly Bear Recovery Plan, Supplement: Bitterroot Ecosystem Recovery Plan Chapter” and U.S. Fish and Wildlife Service, Endangered Species – Mammal)

Effective December 18, 2000, the Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana was mandated through the following:

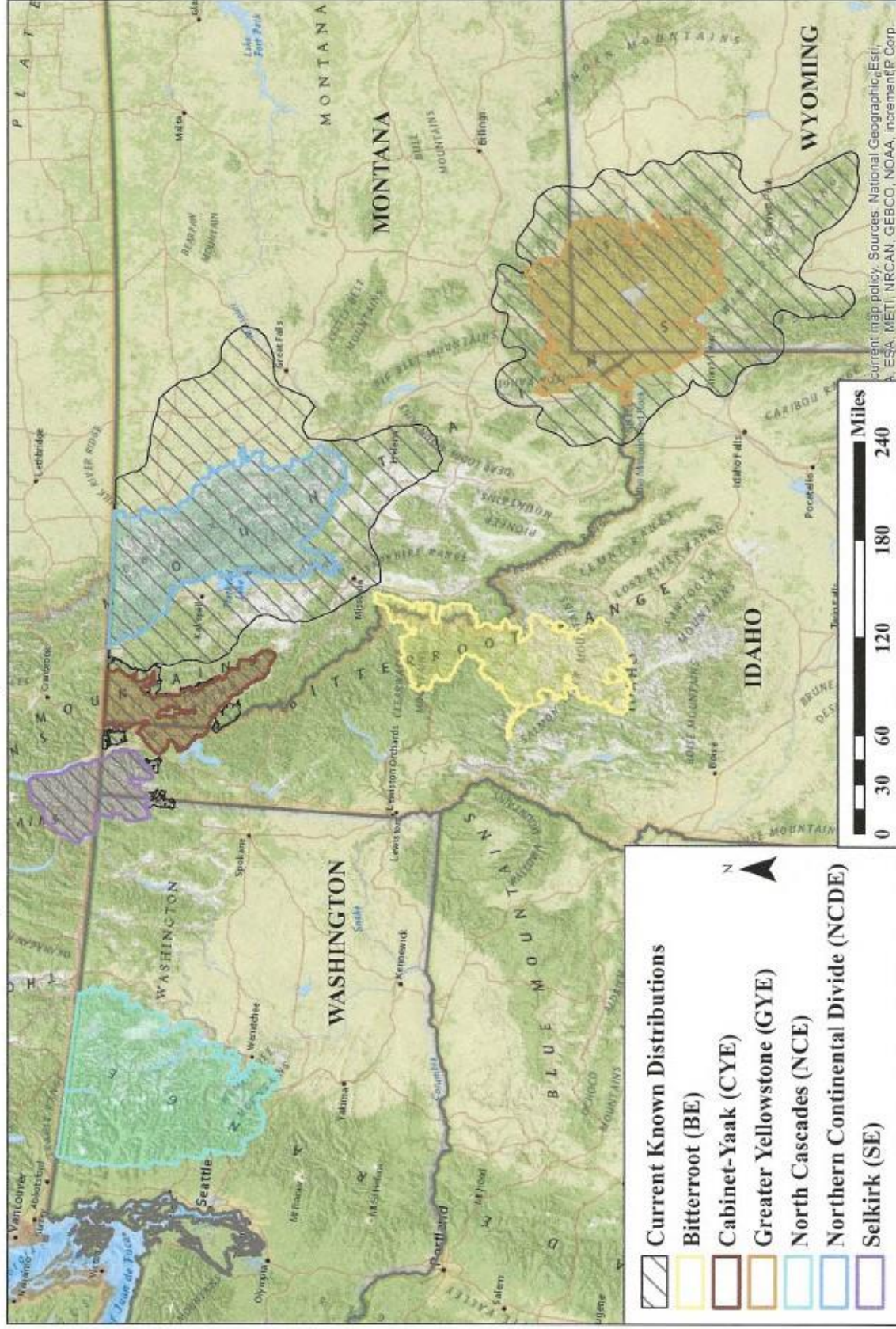
DEPARTMENT OF THE INTERIOR Fish and Wildlife Service 50 CFR Part 17 RIN 1018–AE00
Endangered and Threatened Wildlife and Plants: Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the Fish and Wildlife Service (Service), intend to restore the grizzly bear (*Ursus arctos*), a threatened species, into east-central Idaho and a portion of western Montana. We are designating grizzly bears to be reintroduced into the area described in this rule as a nonessential experimental population pursuant to section 10(j) of the Endangered Species Act of 1973, as amended. Grizzly bear populations have been extirpated from most of the lower 48 United States. They presently occur in populations in the Selkirk and Cabinet-Yaak ecosystems in north Idaho, northeastern Washington, and northwestern Montana; the North Cascades ecosystem in northwestern Washington; the Northern Continental Divide ecosystem in Montana; and the Yellowstone ecosystem in Montana, Wyoming, and Idaho. The purpose of this reintroduction is to reestablish a viable grizzly bear population in the Bitterroot ecosystem in east-central Idaho and adjacent areas of Montana, one of six grizzly recovery areas identified in the Grizzly Bear Recovery Plan. We evaluated potential effects of this final rule in the “Final Environmental Impact Statement on Grizzly Bear Recovery in the Bitterroot Ecosystem.” This grizzly bear reintroduction does not conflict with existing or anticipated Federal agency actions or traditional public uses of wilderness areas or surrounding lands. EFFECTIVE DATE: This rule is effective December 18, 2000

Impact of the Project on Grizzly Bears: Given the small Project footprint in the Big Creek Valley, the amount of human and vehicle activity in the area, the fact the Project is located outside the wilderness area, and the fact that there is not presently a grizzly bear presence in the Bitterroot Recovery Zone, the Project will have no effect on the grizzly bear.

Grizzly Bear Recovery Zones and Distributions



Estimated distributions are current as of 2018 for the GYE and the NCDE and are current as of 2017 for the CYE and the SE. The distribution for the NCE is currently unknown and a draft EIS was released in early 2017 to examine recovery options. The

BE is currently unoccupied with a reintroduction proposal and a non-essential experimental population status.

(ii) Woodland Selkirk Mountain Caribou

Listing status: Endangered

This population has been proposed for downlisting (Endangered -> Threatened)

Caribou have large, concave hoofs that spread widely to support the animal in snow and soft tundra. The feet also function as paddles when caribou swim. Caribou are the only member of the deer family (Cervidae) in which both sexes grow antlers. Antlers of adult bulls are large and massive; those of adult cows are much shorter and are usually more slender and irregular. In late fall, caribou are clove-brown with a white neck, rump, and feet and often have a white flank stripe. The hair of newborn calves is generally reddish-brown. Newborn calves weigh an average of 13 pounds (6 kg) and grow very quickly. They may double their weight in 10-15 days. Weights of adult bulls average 350-400 pounds (159-182 kg). However, weights of 700 pounds (318 kg) have been recorded. Mature females average 175-225 pounds (80-120 kg). Caribou in northern and southwestern Alaska are generally smaller than caribou in the Interior and in southern parts of the state. The Service is currently working to recover the Selkirk Mountain population of the woodland caribou.

The species historical range included Alaska, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, Vermont, Washington, and Wisconsin. Today, the species is known or believed to occur in the following area:

U.S.A. (Idaho (in the counties of Bonner and Boundary), and Washington (Pend Oreille County)); Canada (that part of S.E. British Columbia bounded by the U.S.-Can. border, Columbia R., Kootenay R., Kootenay L., and Kootenai R.)

Critical habitat was designated as follows:

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southern Selkirk Mountains Population of Woodland Caribou AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service, designate critical habitat for the southern Selkirk Mountains population of woodland caribou (*Rangifer tarandus caribou*) under the Endangered Species Act. In total, approximately 30,010 acres (12,145 hectares) is being designated as critical habitat. The critical habitat is located in Boundary County, Idaho, and Pend Oreille County, Washington. We are finalizing this action in compliance with our obligation under the Act and in compliance with a court-approved settlement agreement. The effect of this regulation is to conserve the habitat essential to the southern Selkirk Mountains population of woodland caribou.

Impact of the Project on Caribou:

The recovery area for the population is in the Selkirk Mountains of northern Idaho, northeastern Washington, and southern British Columbia, Canada (USDI Fish and Wildlife Service 1994). The Project is well outside the recovery area and would have no effect on woodland caribou.

(iii) Canada Lynx

Wherever Found in Contiguous U.S.

Listing status: Threatened

The lynx is a medium-sized cat with long legs, large, well-furred paws, long tufts on the ears, and a short, black-tipped tail. The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet. Summer pelage of the lynx is more reddish to gray-brown. Adult males average 10 kilograms (22 pounds) in weight and 85 centimeters (33.5 inches) in length (head to tail), and females average 8.5 kilograms (19 pounds) and 82 centimeters (32 inches). The lynx's long legs and large feet make it highly adapted for hunting in deep snow. The distribution of lynx in North America is closely associated with the distribution of the subalpine fir.

The subalpine fir series occurs at upper elevations throughout most of central Idaho (Steele et al. 1981). Large stands of fire-induced lodgepole pine commonly dominate much of this series and, especially when interspersed with unburned islands of subalpine fir, often provide very good quality lynx habitat. Undergrowth is variable and ranges from tall shrub layers of huckleberry (*Vaccinium* spp.) and menziesia (*Menziesia ferruginea*) to low, depauperate layers of grouse whortleberry (*Vaccinium scoparium*) or heartleaf arnica (*Arnica cordifolia*). Thus, the quality of lynx foraging habitat (i.e., snowshoe hare habitat) often varies greatly by habitat type. Engelmann spruce stands commonly occur along streams and valley bottoms where cool air drainage allows them to extend into the adjacent, lower elevation Douglas-fir communities. Habitat types within the series often occur on very wet sites and on steep northerly aspects where snow accumulates (Steele et al. 1981). Though a minor series, Engelmann spruce habitat types commonly provide good lynx travel corridors and denning habitat. In central Idaho, lodgepole pine community types and habitat types are not widespread but do commonly appear on more gentle terrain, toe-slopes and valley bottoms wherever the species can dominate the site (Steele et al. 1981). Such stands usually grade into subalpine fir or Douglas-fir habitat types on adjacent steeper or higher slopes. Subsequent to disturbances such as fire, these lodgepole pine communities often provide good quality lynx foraging habitat. Douglas-fir habitat types occur over the broadest range of environmental conditions of any conifer in central Idaho (Steele et al. 1981). Douglas-fir communities often extend from lower to upper timberline. The types of most importance to lynx include those where lodgepole pine is a seral species and moist habitat types that can produce dense understory shrubs.

Idaho: Lynx presence has been well documented, historically and currently, throughout the Panhandle of Idaho. In 1998, a survey for lynx using hair-snagging techniques and DNA analyses was conducted in the Priest Lake, Bonners Ferry, and Sandpoint areas of northern Idaho. Lynx hair was collected at 5 separate locations across the survey area (Weaver 1999). Interviews of Idaho residents documented additional records of lynx in the Salmon, Upper Snake, and Bear River watersheds as well (Lewis and Wenger 1998). Other areas in Idaho that have consistent historical records over time include the Stanley Basin, the Henry's Lake/Island Park area, the Lemhi Range, and the upper Bear River watershed. The lynx is considered a species of special concern by the state of Idaho. Canada Lynx Conservation Assessment and Strategy 2nd Edition August 2000 (as amended Oct. 23-24 2001, May 6-8, 2003 and Nov. 12-13, 2003)

USDA Forest Service National Forests in Montana, and parts of Idaho, Wyoming, and Utah March 2007 Northern Rockies Lynx Management Direction Record of Decision.

The direction applies to mapped lynx habitat on National Forest System land presently occupied by Canada lynx, as defined by the Amended Lynx Conservation Agreement between the Forest Service and the FWS (USDA FS and USDI FWS 2006). When National Forests are designing management actions in unoccupied mapped lynx habitat they should consider the lynx direction, especially the direction regarding linkage habitat. If and when those National Forest System lands become occupied, based upon criteria and evidence described in the Conservation Agreement, the direction shall then be applied to those forests. If a conflict exists between this management direction and an existing plan, the more restrictive direction will apply. The detailed rationale for our decision, found further in this document explains how the selected alternative best meets our decision criteria. Those decision criteria are: 1) meeting the Purpose and Need to provide management direction that conserves and promotes the recovery of Canada lynx while preserving the overall multiple use direction in existing plans; 2) responding to the issues; and 3) responding to public concerns. Background: The FWS listed Canada lynx as a threatened species in March 2000, saying the main threat was “the lack of guidance for conservation of lynx and snowshoe hare habitat in National Forest Land and Resource Plans and BLM Land Use Plans” (USDI FWS 2000a).

Federal Register Vol. 79 Friday, No. 177 September 12, 2014 Part II Department of the Interior Fish and Wildlife Service 50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary;

Final Rule:

§ 17.95 Critical habitat—fish and wildlife.

(A) Mammals. * * * * * Canada Lynx (*Lynx canadensis*)

(1) Critical habitat units are depicted on the maps below for the following States and counties: Idaho: Boundary County; (ii) Maine: Aroostook, Franklin, Penobscot, Piscataquis, and Somerset Counties; (iii) Minnesota: Cook, Koochiching, Lake, and St. Louis Counties; (iv) Montana: Carbon, Flathead, Gallatin, Glacier, Granite, Lake, Lewis and Clark, Lincoln, Missoula, Park, Pondera, Powell, Stillwater, Sweetgrass, and Teton Counties; (v) Washington: Chelan and Okanogan Counties; and (vi) Wyoming: Fremont, Lincoln, Park, Sublette, and Teton Counties.

(2) Within these areas the primary constituent element for the Canada lynx is boreal forest landscapes supporting a mosaic of differing successional forest stages and containing: (i) Presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow, and mature multistoried stands with conifer boughs touching the snow surface; (ii) Winter conditions that provide and maintain deep fluffy snow for extended periods of time; (iii) Sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and (iv) Matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within

the legal boundaries on October 14, 2014.

(4) Critical habitat map units.

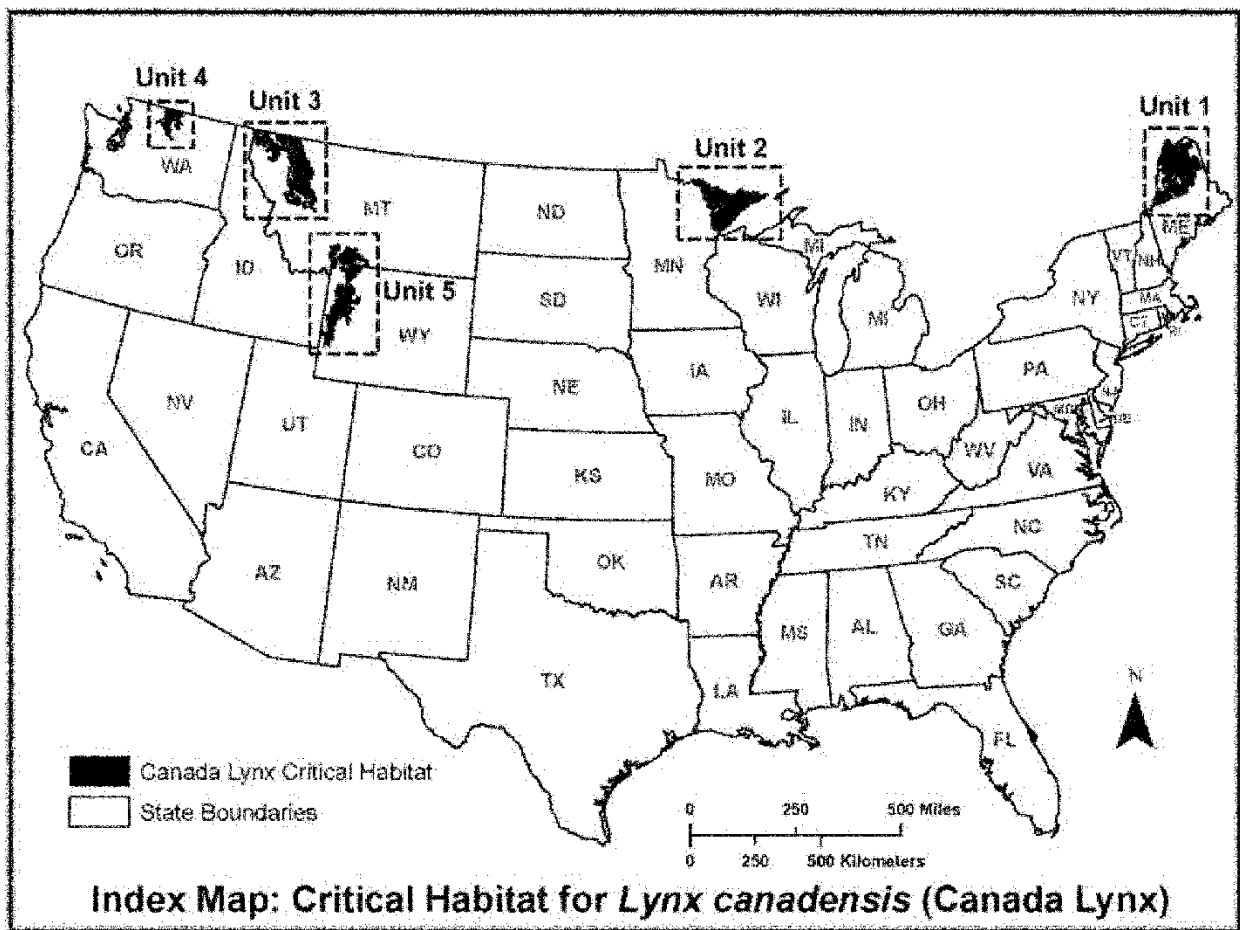
Data layers defining map units were created using a USA Contiguous Albers Equal Area Conic projection. The maps in this entry establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site, <http://www.fws.gov/montanafieldoffice/>, at <http://www.regulations.gov> at Docket No. FWS-R6-ES-2013-0101, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at [50 CFR 2.2](#).

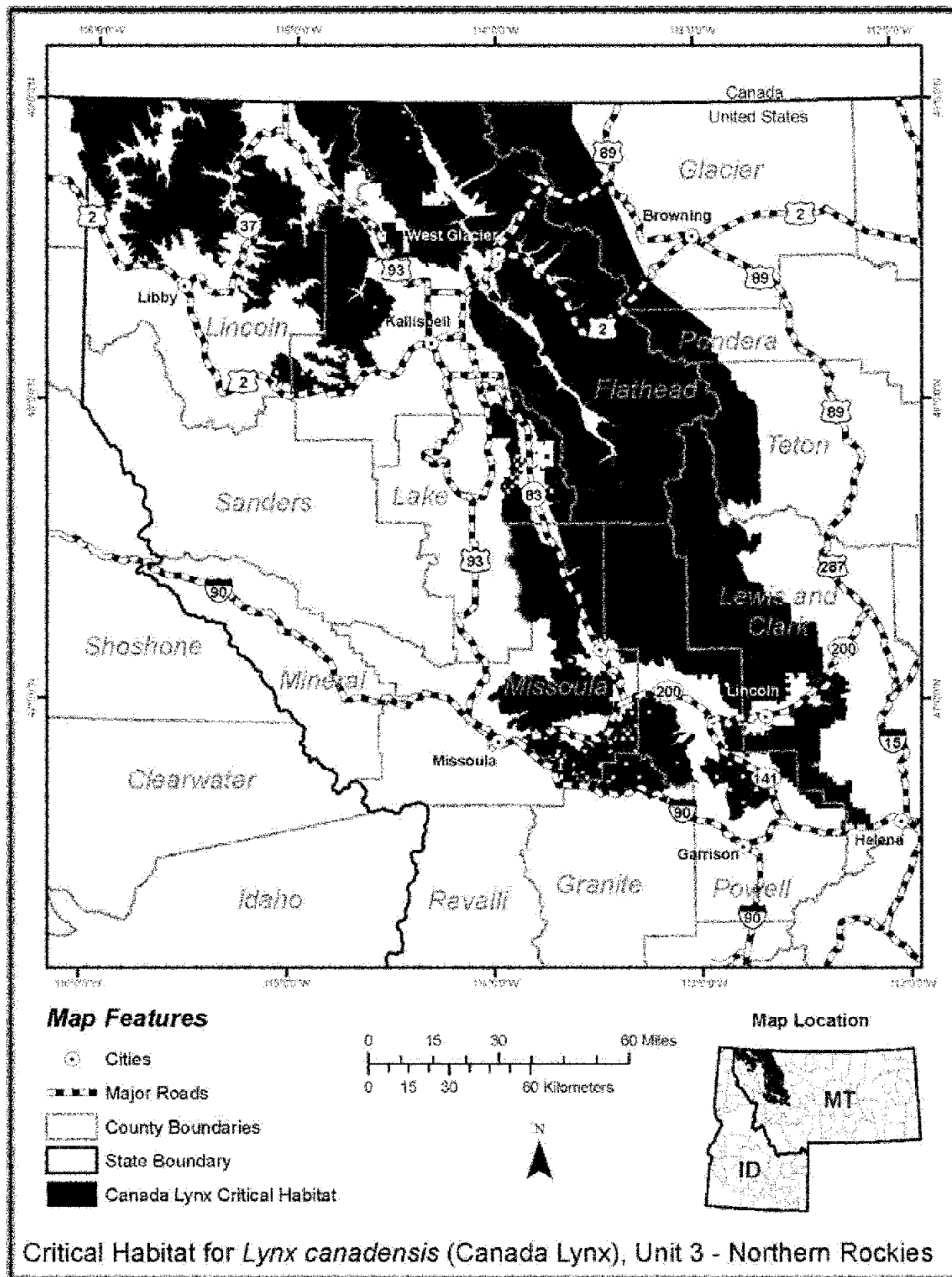
Unit 3: Northern Rockies—Boundary County, ID, and Flathead, Glacier, Granite, Lake, Lewis and Clark, Lincoln, Missoula, Pondera, Powell and Teton Counties, MT. Map of Unit 3, Northern Rockies, follows.

The lynx recovery outline identifies three classifications of lynx recovery areas for the Rocky Mountains. “Core” areas currently support lynx. “Secondary” areas have fewer and more sporadic records of lynx, and reproduction is not documented. “Peripheral” areas have few historical or recent records of occurrence and habitat consists of small patches not well-connected larger patches of high quality habitat.

Impact of the Project on Canada Lynx






The Critical Habitat area for the population is in Boundary County of northern Idaho and habitats for threatened lynx have been mapped in Lynx Analysis Units. The PNF has been determined to be a secondary habitat (US Fish and Wildlife Service (FWS) Recovery Outline - Sept. 2005). According to FWS, the value of secondary habitat is unclear; there is currently no evidence to suggest that unoccupied secondary habitat is considered necessary for a viable population of lynx. The Project is well outside the critical habitat area and would have no effect on Canada lynx.








Northern Rockies
Lynx Planning
Area

Lynx Habitat

-  Core¹
-  Secondary¹
-  Peripheral¹
-  Unoccupied habitat²
-  Occupied habitat²

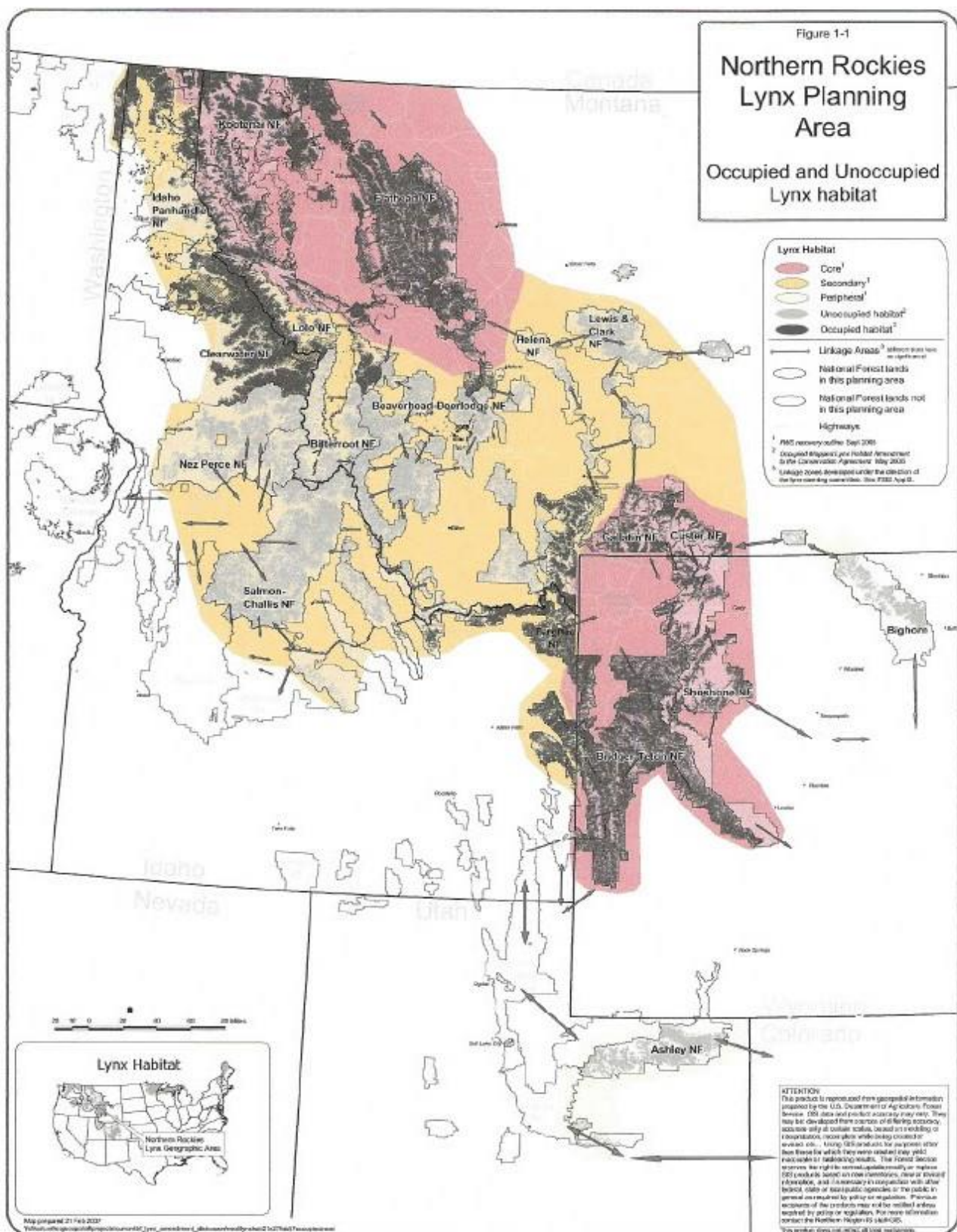
 Linkage Areas³ (distances from have an effect on forest)

 National Forest lands in this planning area

 National Forest lands not in this planning area

 Highway

³ Linkage Zones developed under the direction of the first working committee. See FZED April 02.



(iv) Northern Idaho Ground Squirrel

Listing Status: Threatened

Where Listed: WHEREVER FOUND

The northern Idaho ground squirrel (*Uroditellus brunneus*) is smaller than most ground squirrels at about 9 inches. It was listed as a threatened species under the Endangered Species Act, April 5, 2000. The northern Idaho ground squirrels' fur is dark reddish-gray (due to a mixture of black unbanded and yellowish-red banded guard hairs), with reddish-brown spots on its coat. It has a short, narrow tail, tan feet and ears, grey-brown throat and a creamy white eye ring. This rare squirrel needs large quantities of grass seed, stems and other green leafy vegetation to store fat reserves for its eight-month hibernation period (August/early September through late April/May). Adult males are first to emerge from burrows in the spring followed by females and their young. Populations of the northern Idaho ground squirrel have been found in Adams and Valley Counties of western Idaho, though the species historic range extends into neighboring Washington County. It occurs in dry meadows surrounded by ponderosa pine and Douglas-fir forests, including lands managed by the U.S. Forest Services' Payette National Forest (1,500 to 7,500-foot elevations). Today there are an estimated 1,500 to 2,200 individual animals in about 54 populations, including New Meadows, Lost Valley Reservoir, and other nearby locations. It is thought that northern Idaho ground squirrel populations have decreased due to the loss of their native meadow habitat as a result of fire suppression. Important travel corridors have become fragmented, leaving the ground squirrels to survive in isolated islands of non-connected habitat. As of 2011, the recovery status remained unclear, though range-wide monitoring shows known populations as stable to slightly increasing over time. Biologists have recorded several new population sites, and the animal seems to be responding positively to habitat restoration at certain locations, especially on the Payette National Forest.

Current Species Status: The northern Idaho ground squirrel (*Spermophilus brunneus brunneus*) was federally listed as a threatened species on April 5, 2000 (U.S. Fish and Wildlife Service 2000a). This subspecies is known to exist only in Adams and Valley Counties of western Idaho. The entire range of the subspecies is about 32 by 108 kilometers (20 by 61 miles), and as of 2002, 34 of 40 known population sites were extant. The subspecies declined from an estimated 5,000 individuals in 1985, to less than 1,000 by 1998, when it was proposed for listing under the Endangered Species Act of 1973, as amended. The 1985 estimate was made for populations judged to be in decline. By the year 2000, preliminary surveys indicated that only about 350 individuals remained at known population sites. Based on more extensive census data collected in the spring of 2002, the population was estimated to be 450 to 500 animals. This revised estimate was the result of more intensive monitoring, habitat enhancement measures, and discovery of new populations.

Habitat Requirements and Limiting Factors: The northern Idaho ground squirrel is known to occur in shallow, dry rocky meadows usually associated with deeper, well-drained soils and surrounded by ponderosa pine and Douglas-fir forests at elevations of about 915 to 1,650 meters (3,000 to 5,400 feet). Similar habitat occurs up to at least 1,830 meters (6,000 feet). Consequently, ponderosa pine/shrub-steppe habitat association with south-facing slopes less than 30 percent at elevations below 1,830 meters (6,000 feet) is considered to be potentially suitable habitat. The northern Idaho ground squirrel is primarily threatened by habitat loss due to forest encroachment into former suitable

meadow habitats. Forest encroachment results in habitat fragmentation, eliminates dispersal corridors, and confines the northern Idaho ground squirrel populations into small isolated habitat islands. The subspecies is also threatened by land use changes, recreational shooting, poisoning, genetic isolation and genetic drift, random naturally occurring events, and competition from the larger Columbian ground squirrel (*S. columbianus*).

Impact of the Project on Northern Idaho Ground Squirrel:

The Project is located on a 12' wide X approximately 1340' long right of way in a steep draw along McCorkle Creek. There are no Northern Idaho ground squirrels within the boundary of the Project. The meadows that are in the area are wet for at least part of the season as evidenced by the wetlands that are located near the Lodge and east of the runway making them unsuitable habitat for the ground squirrel. The squirrels that do exist in Valley County are located in the western part of the County nearer to McCall. The Project has no impact on the Northern Idaho ground squirrel.

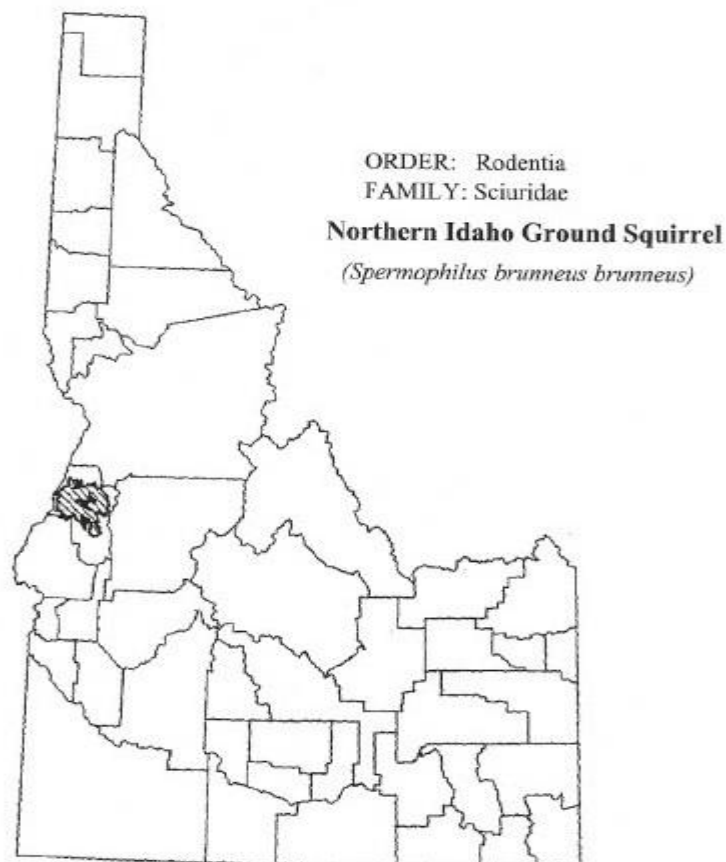


Figure 2. Range of the northern Idaho ground squirrel.
(Idaho Department of Fish and Game 1997)

Northern Idaho Ground Squirrel Probable Historic Distribution



Figure 3 Northern Idaho ground squirrel probable historical distribution map and primary and secondary metapopulation sites (see also Table 3) (U.S. Forest Service 2003).

(vi) North American Wolverine

Listing Status: Proposed Threatened

The wolverine is the largest terrestrial member of the family Mustelidae, with adult males weighing 12 to 18 kilograms (kg) (26 to 40 pounds (lb)) and adult females weighing 8 to 12 kg (17 to 26 lb) (Banci 1994). It resembles a small bear with a bushy tail. It has a round, broad head; short, rounded ears; and small eyes. There are five toes on each foot, with curved and semiretractile claws used for digging and climbing (Banci 1994).

The species historical range included Colorado, Idaho, Minnesota, Montana, Nevada, North Dakota, Utah, Wyoming.

General Habitat Requirements

Wolverines do not appear to specialize on specific vegetation or geological habitat aspects, but instead select areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season (Copeland et al. 2010, entire). The requirement of cold, snowy conditions means that, in the southern portion of the species' range where ambient temperatures are warmest, wolverine distribution is restricted to high elevations, while at more northerly latitudes, wolverines are present at lower elevations and even at sea level in the far north (Copeland et al. 2010, Figure 1). Deep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence in the contiguous United States (Aubry et al. 2007, pp. 2152-2156; Copeland et al. 2010, entire).

The Wolverine occupies remote subalpine and alpine habitats of this section. The population in this section is part of the Salmon– Selway core population occupying the central Idaho mountains complex (IDFG 2014). Primary habitats in the Challis Volcanics correspond to public lands managed by Salmon–Challis, Sawtooth, and Payette National Forests. With the recent designation of new Wilderness Areas in the Boulder and White Cloud mountains, most of the primary wolverine habitat is permanently protected. Other primary habitats are managed as Roadless Areas or for multiple use. Dozens of historic and contemporary wolverine records exist for this section, and verified observations (e.g., specimens, DNA samples, diagnostic photos, captures) are regularly reported for all mountain ranges in this section. No “Tier I” Wolverine Priority Conservation Areas (PCA) are designated for this section (IDFG 2014). Tier I denotes PCAs with the highest conservation need based on potential wolverine use, cumulative threats, and amount of unprotected habitat. Most PCAs in this section are ranked “Tier II” based on lower levels of cumulative threats. A few PCAs within the Frank Church River of No Return Wilderness ranked “Tier III,” reflecting high proportion of PCA areas in permanent land protection and low cumulative threats. The north-south axis of this section encompasses a continuum in Wolverine habitat suitability, with the north half being within the core of the Salmon-Selway Ecosystem and the southern end being at its periphery. Wolverine populations at this southern extent of the Challis Volcanics may be particularly vulnerable to climate-driven reductions in size and connectivity of habitat islands (Aubry et al. 2007, Schwartz et al. 2009, Copeland et al. 2010).

Most wolverine habitat in the Challis Volcanics Section can be characterized as core, contiguous habitat, the southern end being the exception. Here, habitat occurs in disjunct “sky island” patches on the periphery of core populations in the Salmon-Selway Ecosystem and the species' overall distribution in North America. Climate warming and shrinking snowcover may amplify the fragmented nature of wolverine habitat in this section resulting in diminished connectivity and a subpopulation more vulnerable to extirpation. The Smoky, Pioneer, and White Knob mountains contain extensive areas of front-country access for licensed trappers and potential risk of nontarget wolverine capture. Dispersed snow sports recreation and road densities are considered moderate level threats in this section (IDFG 2014).

Prioritized Threats and Strategies for Wolverine. High rated threats to Wolverine in the Challis Volcanics Connectivity, small populations, & extirpation risk Wolverine populations at the southern end of their current US range (i.e., Challis Volcanics Section) exhibit low effective population sizes (number of individuals in a population who contribute offspring to the next generation), restricted gene flow, and perhaps some degree of population fragmentation. Given populations are small and movement between populations is limited, populations are more susceptible to inbreeding. Genetic exchange with the larger Canadian/Alaskan

population is deemed necessary to ensure genetic viability in the long-term. Connectivity between wolverine habitats and subpopulations is critically important to avert further isolation and localized extirpation risk. Climate pattern uncertainty further compounds the challenges to wolverine demography. Climate models tested by McKelvey et al. (2011) predicted that large (>1,000 km²) contiguous areas of wolverine habitat will likely persist into the 21st century (e.g., northwestern Montana, along the Montana-Idaho border, Greater Yellowstone Area). However, these models predicted that central Idaho may be lost as a population source given highly fragmented spring snow cover and associated loss of connectivity. Consequent loss of habitat suitability (i.e., spring snow cover, warming temperatures) may result in extirpation of wolverines from a significant portion of currently occupied range (Copeland et al. 2010, US Fish and Wildlife Service 2010). (Idaho State Wildlife Action Plan, 2015)

Impact of the Project on North American Wolverine:

There are no wolverines within the Project boundaries. There is no Project impact on wolverine populations in the Big Creek Valley.

Fish Species

(v) Bull Trout

Listing Status: Threatened (U.S.A., conterminous, (lower 48 states) and Experimental Population, Non-Essential (Clackamas River subbasin and the mainstem Willamette River, from Willamette Falls to its points of confluence with the Columbia River, including Multnomah Channel)

Bull trout (*Salvelinus confluentus*) are members of the family Salmonidae and are native to Washington, Oregon, Idaho, Nevada, Montana and western Canada. Compared to other salmonids, bull trout have more specific habitat requirements that appear to influence their distribution and abundance. They need cold water to survive, so they are seldom found in waters where temperatures exceed 59 to 64 degrees (F). They also require stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and unblocked migratory corridors. Bull trout may be distinguished from brook trout (*Salvelinus fontinalis*) by several characteristics: spots never appear on the dorsal (back) fin, and the spots that rest on the fish's olive green to bronze back are pale yellow, orange or salmon-colored. The bull trout's tail is not deeply forked as is the case with lake trout (*Salvelinus namaycush*). Bull trout exhibit two forms: resident and migratory. Resident bull trout spend their entire lives in the same stream/creek. Migratory bull trout move to larger bodies of water to overwinter and then migrate back to smaller waters to reproduce. An anadromous form of bull trout also exists in the Coastal-Puget Sound population, which spawns in rivers and streams but rears young in the ocean. Resident and juvenile bull trout prey on invertebrates and small fish. Adult migratory bull trout primarily eat fish. Resident bull trout range up to 10 inches long and migratory forms may range up to 35 inches and up to 32 pounds. Bull trout are currently listed coterminously as a threatened species. The species historical range included Alaska, California, Idaho, Montana, Nevada, Oregon, Washington.

Bull trout (a threatened species and MIS) have been documented in the analysis area in Big Creek..... (Raleigh 1994). Spawning Bull trout (fluvial and resident) were identified in Smith Creek below the confluence of the North Fork Smith Creek. Bull trout were also observed in lower North Fork Smith Creek (unpublished data on file, Payette National Forest, 2002). Critical habitat has been proposed but not designated by USFWS at this time. (The Payette National Forest (N.F.), The Golden Hand No. 3 and No. 4 Lode Mining Claims Proposed Plan of Operation: EIS)

In the following, a Recovery Plan for the bull trout was announced:

DEPARTMENT OF THE INTERIOR Fish and Wildlife Service [FWS-R1-ES-2015-N151; FXES11130100000-156-FF01E00000] Endangered and Threatened Wildlife and Plants; Recovery Plan for the Coterminous United States Population of Bull Trout AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of document availability.

According to the reference document from the Payette NF Program Fisheries Files with the subject "McCorkle Creek ESA Listed Species Presence/Absence, Flow Data", dated January 28, 2016 previously described in section E (b) Fisheries and Wildlife eDNA sampling, electrofishing, and snorkeling did not show a presence for bull trout in McCorkle Creek above a barrier culvert in the Project Area.

There is no evidence of the presence of bull trout in McCorkle Creek in the Project Area and the mode of operation poses no threat to downstream species.

(viii) Chinook

Impact of the Project on Steelhead and Chinook:

There is no evidence of the presence of either Steelhead or Chinook in McCorkle Creek in the Project Area and the mode of operation poses no threat to downstream species.

June 2016

KNOWN / SUSPECTED DISTRIBUTION BY FOREST

[illegible]

[illegible]

Desert tortoise 8/04/89 <i>Gopherus agassizii</i>														X		
Yosemite toad 6/30/2014 <i>Anaxyrus canorus</i>														X		
FISH																
Steelhead trout (Snake River summer) <i>Oncorhynchus mykiss</i>		X			X						X	X	X			
THREATENED	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C
Chinook salmon, Snake River sprg/smr <i>Oncorhynchus tshawytscha</i> 4/22/92 (ED 5/22/92)		X			X					X	X	X				
Chinook salmon, Snake River fall <i>Oncorhynchus tshawytscha</i> 4/22/92 (ED 5/22/92)										X						
Greenback cutthroat trout <i>Oncorhynchus clarki stomia</i>									X							
Railroad Valley springfish 3/31/86 <i>Crenichthys nevadae</i>														X		
Lahontan cutthroat trout 10/13/70 <i>Oncorhynchus clarki</i> <i>henshawi</i>								X						X		
Columbia River bull trout 6/10/98 <i>Salvelinus confluentus</i>		X			X			X		X	X	X				
Paiute cutthroat trout 3/11/67 <i>Oncorhynchus clarki seleniris</i>														X		
PLANTS																
Deseret milkvetch 10/20/99 <i>Astragalus desereticus</i>									?						?	
Heliotrope milkvetch 11/6/87 <i>Astragalus limnocharis</i> <i>var. montii (A. montii)</i>									X							
Slick-spot peppergrass 10/08/09 <i>Lepidium papilliferum</i>		?														
Winkler cactus <i>Pediocactus winkleri</i>									?							
Maguire's primrose 8/21/85 <i>Primula cusickiana</i> var. <i>maguirei (P. maguirei)</i>																X
Last chance townsendia 8/21/85 <i>Townsendia aprica</i>						X	X									
Ute ladies' tresses orchid 1/17/92 <i>Spiranthes diluvialis</i> (2/18/92)		?		?	?		?				?	?	X		X	?
Webber ivesia 7/3/2014 <i>Ivesia webberi</i>														X		
PROPOSED	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C

North American wolverine Gulo gulo (luscus)	X	X	X	X	X					X	X	X	X		X	
CANDIDATE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C
Sierra Nevada red fox Vulpes vulpes necator														X		
Whitebark Pine Pinus albicaulis		X	X		X			X		X	X	X	X			
SENSITIVE	A SH	BOI	B- T	CAR	C HA	DIX	FIS	H UM	M-L	P AY	SAL	S AW	T AR	T OI	UIN	W -C
MAMMALS																
Bighorn Sheep Ovis canadensis - Includes Rocky Mountain bighorn sheep (O. c. canadensis), California bighorn sheep (O. c. californiana), and desert bighorn sheep (O. c. nelsoni) (7/29/2009)	X	X	X		X		X	X	X	X	X	X	X	X	X	X
Gray wolf (Rocky Mountain DPS) Canis lupus		X		X	X					X	X	X	X			X
Pygmy rabbit Brachylagus idahoensis				X	X	X	X	X			X	X	X	X		
Spotted bat Euderma maculatum	X	X	X	X	X	X	X	X	X	X	X	X	?	X	X	X
Fisher Martes pennanti		X	X		X					X	X	X	?		X	
Southern Idaho Ground Squirrel Spermophilus brunneus endemicus		X								X						
Townsend's Western Big-Eared Bat Corynorhinus townsendii townsendii	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BIRDS																
Bald eagle Haliaeetus leucocephalus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Boreal owl Aegolius funereus	X	X	X	X	X					X	X	X	X			X
Greater sage-grouse Centrocercus urophasianus	X	X	X	X	X	X	X	X	X	?	X	X	X	X	X	X
Greater sage-grouse Bi-State DPS Centrocercus urophasianus														X		
Trumpeter swan Cygnus buccinator			X	X									X			
Peregrine falcon 3/20/84 Falco peregrinus anatum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Common loon Gavia immer		X	X		+					?	+	X	X			
Harlequin duck Histrionicus histrionicus			X	X	?+					X	?+		X			

[illegible]

Dark Blue														X		
SENSITIVE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C
<i>Euphilotes ancilla purpurea</i>																
Morand's Checkerspot <i>Euphydryas anicia morandi</i>														X		
PLANTS																
Pink agoseris <i>Agoseris lackschewitzii</i>			X								X		X			
Wonderland Alice flower <i>Aliciella (=Gilia) caespitosa</i>						X	X									
Chatterley Onion <i>Allium geyeri</i> var. <i>chatterleyi</i>									X							
Swamp onion <i>Allium madidum</i>										X						
Tolmie's onion <i>Allium tolmiei</i> var. <i>persimile</i>		X								X						
Candystick <i>Allotropa virgata</i>										X						
Sweet-flowered rock jasmine <i>Androsace chamaejasme</i> ssp. <i>carinata</i>			X						X				X			
Charleston angelica <i>Angelica scabrida</i>														X		
Wheeler's angelica <i>Angelica wheeleri</i>															X	X
Meadow pussytoes <i>Antennaria arcuata</i>								X								
Charleston pussytoes <i>Antennaria soliceps</i>														X		
Link Trail columbine <i>Aquilegia flavescens</i> var. <i>rubicunda</i>									X							
Graham columbine <i>Aquilegia grahamii</i>	X															
Rosy King's sandwort <i>Arenaria kingii</i> ssp. <i>rosea</i>														X		
Petiolate wormwood <i>Artemisia campestris</i> ssp. <i>borealis</i> var. <i>petiolata</i>	X															
Eastwood milkweed <i>Asclepias eastwoodiana</i>								X						X		
Clokey milkvetch <i>Astragalus aequalis</i>														X		
SENSITIVE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C

[illegible]

[illegible]

[illegible]

[illegible]

Idaho pennycress <i>Noccaea idahoensis</i> var. <i>aileeniae</i> (= <i>Thlaspi aileeniae</i>)					X							X				
Shevock rockmoss <i>Orthotrichum shevockii</i>														X		
SENSITIVE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C
Spjut's brittle-moss <i>Orthotrichum spjutii</i>														X		
Challis crazyweed <i>Oxytropis besseyi</i> var. <i>salmonensis</i>					X											
Beaver Mountain groundsel <i>Packera</i> (= <i>Senecio</i>) <i>castoreus</i>							X									
Podunk groundsel <i>Packera</i> (= <i>Senecio</i>) <i>malmstenii</i>						X										
Arctic poppy <i>Papaver radicum</i> var. <i>pygmaeum</i>	X															X
Naked-stemmed parrya <i>Parrya nudicaulis</i>			X													
Paria breadroot <i>Pediomelum pariense</i>						X										
Stemless beardtongue <i>Penstemon acaulis</i> var. <i>acaulis</i>	X															
Dune penstemon <i>Penstemon arenarius</i>														?		
Red Canyon beardtongue <i>Penstemon bracteatus</i>						X										
Cache beardtongue <i>Penstemon compactus</i>				X												X
Elegant penstemon <i>Penstemon concinnus</i>								?								
Idaho penstemon <i>Penstemon idahoensis</i>												X				
Charleston beardtongue <i>Penstemon leiophyllus</i> var. <i>heckii</i>														X		
Lemhi penstemon <i>Penstemon lemhiensis</i>											X					
Mt. Moriah penstemon <i>Penstemon moriahensis</i>								X								
Little penstemon <i>Penstemon parvus</i>						X	X									
Pinyon penstemon <i>Penstemon pinorum</i>						X										
Bashful penstemon <i>Penstemon pudicus</i>								X								
SENSITIVE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C

Rhizome beardtongue <i>Penstemon rhizomatosus</i>								X								
Wassuk beardtongue <i>Penstemon rubicundus</i>													X			
Jaeger beardtongue <i>Penstemon thompsoniae</i> ssp. <i>jaegeri</i>													X			
Ward beardtongue <i>Penstemon wardii</i>							X									
Inconspicuous phacelia <i>Phacelia inconspicua</i>								?								
Small-flower phacelia <i>Phacelia minutissima</i>		X						X				?				
Mono phacelia <i>Phacelia monoensis</i>														X		
Salmon twin bladderpod <i>Physaria didymocarpa</i> var. <i>lyrata</i>										X			X			
Creeping twinpod <i>Physaria integrifolia</i> v. <i>monticola</i>			X													
Whitebark Pine <i>Pinus albicaulis</i>		X	X		X			X		X	X	X	X	X		
Altered andesite popcorn flower <i>Plagiobothrys glomeratus</i>														X		
Marsh's bluegrass <i>Poa abbreviata</i> ssp. <i>marshii</i>					X			X			X	X		X		
White Mountain skipilot <i>Polemonium chartaceum</i>														X		
Williams combleaf <i>Polyctenium williamsii</i>														X		
Angell cinquefoil <i>Potentilla angelliae</i>							X									
Cottam cinquefoil <i>Potentilla cottamii</i>												X				X
Sagebrush cinquefoil <i>Potentilla johnstonii</i>								X								
Alkali primrose <i>Primula alcalina</i>													X			
Ruby Mountain primrose <i>Primula capillaris</i>								X								
SENSITIVE	ASH	BOI	B-T	CAR	CHA	DIX	FIS	HUM	M-L	PAY	SAL	SAW	TAR	TOI	UIN	W-C
Nevada primrose <i>Primula cusickiana</i> var. <i>nevadensis</i> (=P. <i>nevadensis</i>)								X								
Greenland primrose <i>Primula egaliksensis</i>			X													
Bugleg goldenweed <i>Pyrocoma</i> (=Haplopappus) <i>insecticruris</i>		X										X				

[illegible]

Alpine goldenweed <i>Tonestus</i> (=Haplopappus) <i>alpinus</i>													X		
Barneby woody aster <i>Tonestus</i> (=Aster) <i>kingii</i> var. <i>barnebyana</i>							X							X	
Sevier townsendia <i>Townsendia jonesii</i> var. <i>lutea</i>							X								
Charleston ground daisy <i>Townsendia jonesii</i> var. <i>tumulosa</i>													X		
Short-styled tofieldia <i>Triantha occidentalis</i> ssp. <i>brevistyla</i>									X						
Current Summit clover <i>Trifolium andinum</i> var. <i>podocephalum</i>								X							
Leiberg's clover <i>Trifolium leibergii</i>								X							
Rollins clover <i>Trifolium macilentum</i> var. <i>rollinsii</i>													X		
Charleston violet <i>Viola charlestonensis</i>													X		
Smith violet <i>Viola franksmithii</i>															X
Lithion violet <i>Viola lithion</i>								X							
Idaho range lichen <i>Xanthoparmelia</i> <i>idahoensis</i>										X					
ASH – Ashley	CHA – Challis						M-L – Manti-LaSal				TAR – Targhee				
BOi – Boise	DIX – Dixie						PAY – Payette				TOI – Toiyabe				
B-T – Bridger Teton	CAR – Caribou						FIS – Fish Lake				CAR – Caribou				
SAL – Salmon	UIN – Uinta						HUM – Humboldt				SAW – Sawtooth				
W-C – Wasatch															

KEY:

X = known distribution species and/or habitat
 ? = suspected or potential habitat
 * = wild and naturally reproducing stocks
 + = migration corridors only
 o = offsite impacts (e.g. downstream)

This list was compiled from the following sources: R-4

Vertebrate Sensitive Species List
 (August 13, 1990) *R-4 Sensitive*
Plant List (April 29, 1994)
Endangered and Threatened Wildlife and Plants, USDA-U.S. Fish & Wildlife Service (August 20, 1994)
Northern Goshawk - Listed as a Sensitive Species in R4 (October 31, 1991)
Miscellaneous Federal Registers

Probability of occurrence of TE&S species for the Big Creek hydro analysis area						
Species	Scientific name	Preferred habitat	Documented sightings in or directly adjacent	Habitat in or directly adjacent to analysis	Could project impact species or habitat?	Rationale
FEDERALLY LISTED SPECIES						
ENDANGERED SPECIES						
Sockeye salmon	<i>Oncorhynchus nerka</i>	Sockeye spend approximately the first half of their life cycle rearing in lakes. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean. Critical habitat was designated for the Snake River ESU on December 28, 1993 and for the Ozette Lake ESU on September 2, 2005.	No	No	No	Sockeye return to Redfish Lake on the Main Salmon River. Heavily managed recovery program. They rear in lakes so would not be a factor at Big Creek.
THREATENED SPECIES						
Canada lynx	<i>Lynx canadensis</i>	Lynx are generally found in moist, boreal forests that have cold, snowy winters and a high density of their favorite prey: the snowshoe hare. Snowshoe hares tend to occur in habitats where dense stands of young conifers provide shelter, and where they can forage on conifer boughs that protrude above several feet of snow. These forest thickets may result from wildfires, timber harvest, or other disturbances. Meanwhile, lynx also use mature forests with dense undercover and downed wood for denning.	No	No	No	See comments in Endangered Species discussion.
Northern Idaho ground squirrel	<i>Spermophilus brunneus</i>	Northern populations are associated with shallow rocky soils in xeric meadows surrounded by ponderosa pine and Douglas-fir forest; southern populations inhabit low rolling hills and valleys now dominated by annual grassland with relict big sagebrush and bunch grasses (Yensen et al. 1991, Yensen 1991). This squirrel may occur on slopes and rarely on ridges (Yensen 1984). It burrows extensively in shallow rocky soils, but nest burrows are located in adjacent areas with deeper (>1 meter) well-drained soils (Yensen et al. 1991).	No	No	No	See comments in Endangered Species discussion.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	BREEDING: Open woodland (especially where undergrowth is thick), parks, deciduous riparian woodland; in the West, nests in tall cottonwood and willow riparian woodland. Nests in deciduous woodlands, moist thickets, orchards, overgrown pastures; in tree, shrub, or vine, an average of 1-3 meters above ground (Harrison 1979). Subspecies OCCIDENTALIS requires patches of at least 10 hectares (25 acres) of dense riparian forest with a canopy cover of at least 50 percent in both the understory and overstory; nests typically in mature willows (Biosystems Analysis 1989). NONBREEDING: forest, woodland, and scrub. Also mangroves in Puerto Rico (Raffaele 1983).	No	No	No	There are four Critical Habitat areas in Idaho and they are all further south along the Snake River. There is no Critical Habit in Valley County, and none in the Big Creek Valley.

Steelhead trout	<i>Oncorhynchus mykiss</i>	Steelhead are capable of surviving in a wide range of temperature conditions. They do best where dissolved oxygen concentration is at least 7 parts per million. In streams, deep low-velocity pools are important wintering habitats. Spawning habitat consists of gravel substrates free of excessive silt. <u>Critical habitat</u> for 10 west coast steelhead DPSs was designated on September 2, 2005. <u>Critical habitat</u> for the Puget Sound steelhead was designated on February 24, 2016.	No	No	No	See comments in Endangered Species and Fisheries discussions.
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Chinook salmon generally spend most (often 2-4 years but up to 6 years) of their lives in the ocean. For spawning, they migrate up to several hundred kilometers upstream to their natal stream, where eggs are deposited in gravel bottoms of large streams and rivers.	Yes	Yes	No	See comments in Endangered Species and Fisheries discussions.
Columbia River bull trout	<i>Salvelinus confluentus</i>	Global Range: (200,000-2,500,000 square km (about 80,000-1,000,000 square miles)) This distinct population segment of bull trout includes populations residing in the Columbia River and its tributaries in portions of Oregon, Washington, Idaho, and Montana, including four geographic areas (1) lower Columbia River (downstream of the Snake River confluence), (2) mid-Columbia River (Snake River confluence to Chief Joseph Dam), (3) upper Columbia River (upstream from Chief Joseph Dam), and (4) Snake River and its tributaries (including the Lost River drainage) (USFWS 1998). Populations in Canada are not included. Remaining important strongholds for this DPS tend to be found in large areas of contiguous habitats in the Snake River basin of central Idaho Mountains, upper Clark Fork and Flathead rivers in Montana, and the Blue Mountains in Washington and Oregon (USFWS 1998).	No	No	No	See comments in Endangered Species and Fisheries discussions.
PROPOSED SPECIES						
North American wolverine	<i>Gulo gulo (luscus)</i>	Terrestrial Habitat(s): Alpine, Forest - Conifer, Grassland/herbaceous, Shrubland/chaparral, Tundra, Woodland - Conifer Special Habitat Factors: Burrowing in or using soil, Fallen log/debris, Habitat Comments: Alpine and arctic tundra, boreal and mountain forests (primarily coniferous). Limited to mountains in the south, especially large wilderness areas. Usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat. May disperse through atypical habitat. When inactive, occupies den in cave, rock crevice, under fallen tree, in thicket, or similar site. Terrestrial and may climb trees.	No	Yes	No	See comments in Endangered Species discussions.
CANDIDATE SPECIES						
Whitebark Pine	<i>Pinus albicaulis</i>	Terrestrial Habitat(s): Forest - Conifer, Forest/Woodland, Woodland – Conifer	No	No	No	Audit found no TES species in Project area.
SENSITIVE SPECIES						

Bighorn Sheep	<i>Ovis Canadensis</i>	Terrestrial Habitat(s): Alpine, Bare rock/talus/scree, Cliff, Desert, Grassland/herbaceous, Shrubland/chaparral, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed	No	No	No	Rocky Mountain Bighorn Sheep are found in the rugged canyon near the Middle Fork and along the Middle Fork. There are no bighorn sheep in the headwaters section of Big Creek.
Rocky Mountain bighorn sheep	<i>O. c. Canadensis</i>	Habitat Comments: Bighorn sheep occur in mesic to xeric, alpine to desert grasslands or shrub-steppe in mountains, foothills, or river canyons (Shackleton et al. 1999, Krausman et al. 1999). Many of these grasslands are fire-maintained (Geist 1971, Erickson 1972). Suitable escape terrain (cliffs, talus slopes, etc.) is an important feature of the habitat. In winter, Rocky Mountain Bighorns spend as much as 86% of their time within 100 meters of escape terrain (Oldemayer et al. 1971, Erickson 1972), and usually stay within 800 meters of escape terrain throughout the year (Pallister 1974). Mineral licks are more important in the range of Rocky Mountain Bighorn than in the range of "California" Bighorn, presumably because the soils in the range of the former are generally lower in mineral content (Van Dyke 1978). Distribution is correlated with low precipitation levels, especially in winter and spring. Elevation varies considerably, both geographically and seasonally, from as low as 450 meters to over 3,300 meters (Shackleton et al. 1999)				
California bighorn sheep	<i>O. c. californiana</i>					
Desert bighorn sheep	<i>O. c. nelsoni</i>					
Gray wolf	<i>Canis lupus</i>	Habitat generalists and will establish territories anywhere there is sufficient food.	Yes	Yes	No	See comments in Fisheries and Wildlife section.
Spotted bat	<i>Euderma maculatum</i>	This species occurs in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, riparian and river corridors, meadows, open pasture, and hayfields. Active foraging may be mostly in open terrain, including forest clearings, meadows, and open wetlands, sometimes in open areas near buildings (see review in Schmidt 2003) or even golf courses. Roosts, including maternity roosts, generally are in cracks and crevices in cliffs (Wai-Ping and Fenton 1989, Pierson and Rainey 1998, Rabe et al. 1998), sometimes in caves or in buildings near cliffs (Sherwin and Gannon 2005). Winter habits poorly known.	No	Yes	No	Habitat does occur in some steep basalt canyons on the PNF. There have been no documented occurrences in the PNF.
Fisher	<i>Martes pennanti</i>	Terrestrial Habitat(s): Forest - Conifer, Forest - Hardwood, Forest - Mixed, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed Special Habitat Factors: Fallen log/debris, Standing snag/hollow tree Habitat Comments: Fishers inhabit upland and lowland forests, including coniferous, mixed, and deciduous forests. They occur primarily in dense coniferous or mixed forests, including early successional forest with dense overhead cover (Thomas et al. 1993). Fishers commonly use hardwood stands in summer but prefer coniferous or mixed forests in winter. They generally avoid areas with little forest cover or significant human disturbance and conversely prefer large areas of contiguous interior forest (see USFWS 2004). Powell (1993) concluded that forest type is probably not as important to fishers as the vegetative and structural aspects that lead to abundant prey populations and reduced fisher vulnerability to predation, and that they may select forests that have low and closed canopies. Several studies have shown that fishers are associated with riparian areas (see USFWS 2004), which are in some cases protected from logging and generally more productive, thus having the dense canopy closure, large trees and general structural complexity associated with fisher habitat (Dark 1997). Riparian areas may be important to fishers because they provide important rest site elements, such as broken tops, snags, and coarse woody debris (Seglund 1995).	No	No	No	The ICDC has 14 fisher records for the PNF (ICDC 2009). However, they generally avoid areas with little forest cover or significant human disturbance and conversely prefer large areas of contiguous interior forest (see USFWS 2004). With the open areas of the valley and the human presence, it is unlikely that fishers are in the Project area.

Southern Idaho Ground Squirrel	<i>Spermophilus brunneus endemicus</i>	<p>Terrestrial Habitat(s): Grassland/herbaceous</p> <p>Special Habitat Factors: Burrowing in or using soil</p> <p>Habitat Comments: Compared to the northern subspecies, the southern Idaho ground squirrel lives on lower elevation, paler colored soils formed by granitic sands and clays from the Boise Mountains (USFWS 2004).</p> <p>Southern Idaho ground squirrels inhabit low rolling hills and valleys in lower-elevation shrub/steppe in the lower Weiser and Payette river basins. They inhabit an area once dominated by big sagebrush (<i>Artemisia tridentata</i>), bitterbrush (<i>Purshia tridentata</i>), and a variety of native forbs and bunchgrasses (Yensen 1984, 1991; Yensen et al. 1991). Prescott and Yensen (1999) suggested that these squirrels prefer areas with a high percentage of native cover types, especially areas with big sage; however, some non-native features may enhance their survival as well, specifically alfalfa fields, haystacks, or fence lines. The predominant vegetation was formerly big sagebrush-bunchgrass-forb associations, with bitterbrush (<i>Purshia tridentata</i>) found in the sandier locations (Yensen 2000b). The big sagebrush-bunch grass-forb complex has dramatically changed so that most of the former vegetative structure has been replaced by exotic annuals. [USFWS 2004]</p>	Yes	Yes	No	See comments in Endangered Species discussions.
Townsend's Western Big-Eared Bat	<i>Corynorhinus townsendii townsendi</i>	<p>Maternity and hibernation colonies typically are in caves and mine tunnels. Prefers relatively cold places for hibernation, often near entrances and in well-ventilated areas. In California, most limestone caves are too warm for successful hibernation; solitary males and small groups of females are known to hibernate in buildings in the central part of the state. Does not use crevices or cracks; hangs from the ceiling, generally near the zone of total darkness (Schmidly 1991). Uses caves, buildings and tree cavities for night roosts. Throughout much of the known range, commonly occurs in mesic habitats characterized by coniferous and deciduous forests (Kunz and Martin 1982). Habitats in western California include: cultivated valleys bordered by broad-leaved trees and dense thickets of brush; nearby hills with extensive grassy slopes, groves of oaks, areas of chaparral, and forests of coniferous trees and madrone; oak-covered hills just below the juniper and pinyon belt; coastal lowlands supporting dense ocean-side vegetation such as brush and lush annuals (see Handley 1959). Recorded in the Providence Mountains of the Mohave Desert in caves and tunnels near the boundary between the yucca belt of the lower slopes and the pinyon-juniper belt of the upper slopes (see Handley 1959). Habitats in western Oregon include pine-fir-hemlock-broadleaf deciduous forest (see Handley 1959). Nimble; able to fly through narrow passages (Hoffmeister 1986). Females gather in small nursery colonies in the warm parts of caves or mines, sometimes in buildings. Individuals generally return to the same maternity roost in successive years.</p>	No	No	No	Big Eared Bats have been found in the PNF, but the habitat required, namely caves and mine tunnels, is not found around the project site.
Bald eagle	<i>Haliaeetus leucocephalus</i>	<p>Associated with large bodies of water. Nest in forested areas near oceans, rivers, estuaries, lakes, and reservoirs. (Marshall et al. 2003)</p>	Yes	Yes	No	Project area lacks the habitat that contains large bodies of water or major rivers to support either nesting or wintertime eagles.
Boreal owl	<i>Aegolius funereus</i>	<p>Terrestrial Habitat(s): Forest - Conifer, Forest - Hardwood, Forest - Mixed</p> <p>Special Habitat Factors: Standing snag/hollow tree</p> <p>Habitat Comments: Dense coniferous forest, mixed forest, thickets of alder, aspen, or stunted spruce, most commonly in proximity to open grassy situations (AOU 1983); muskeg bogs. In the Rockies, occurs generally in mature, multilayered spruce-fir forest. Roosts in dense cover by day, in cool microsites in summer; frequently changes roosting site.</p>	No	Yes	No	Habitat could be suitable in or adjacent to the area around the Project but there have not been any owl sightings around or inside the Project area.
Greater sage-grouse	<i>Centrocercus urophasianus</i>	<p>Terrestrial Habitat(s): Desert, Grassland/herbaceous, Savanna, Shrubland/chaparral</p> <p>Habitat Comments: Habitat includes foothills, plains, and mountain slopes where sagebrush is present (AOU 1983), often with a mixture of sagebrush, meadows, and aspen, in close proximity.</p>	No	No	No	Sagebrush is not found in abundance in the area around the head waters of Big Creek, and no sagebrush is located within the Project area. Sage grouse do not exist in the Project area.

Peregrine falcon	<i>Falco peregrinus anatum</i>	Terrestrial Habitat(s): Cliff, Desert, Shrubland/chaparral, Tundra, Urban/edificarian, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed Habitat Comments: Various open situations from tundra, moorlands, steppe, and seacoasts, especially where there are suitable nesting cliffs, to mountains, open forested regions, and human population centers (AOU 1983). When not breeding, occurs in areas where prey concentrate, including farmlands, marshes, lakeshores, river mouths, tidal flats, dunes and beaches, broad river valleys, cities, and airports.	No	No	No	The combination of nesting cliffs and suitable open areas are not found in the immediate area, and not found in the Project area. The IDCDC has one peregrine falcon sighting record on the Payette NF (IDCDC 2009).
Common loon	<i>Gavia immer</i>	Estuarine Habitat(s): Bay/sound, Lagoon, River mouth/tidal river Riverine Habitat(s): BIG RIVER Lacustrine Habitat(s): Deep water, Shallow water	No	No	No	Loons are bigger water birds. Habitat not found in the Big Creek valley.
Harlequin duck	<i>Histrionicus histrionicus</i>	Habitat Comments: Winters in rough coastal waters, especially along rocky shores or reefs; summering nonbreeders and immatures also occur in this habitat (Cassirer et al. 1993). Nests along fast-moving rivers and mountain streams on rocky islands or banks. Streams are braided to reticulate with many riffles and rapids (Cassirer et al. 1993). Requires relatively undisturbed, low gradient, meandering mountain streams with dense shrubby riparian areas (greater than 50% streamside shrub cover), and woody debris for nesting and brood rearing; also needs mid-stream boulders or log jams and overhanging vegetation for cover and loafing; indicator of high water quality (Spahr et al. 1991). Sometimes nests beside mountain lakes and lake outlets	No	No	No	Harlequin ducks are found in Idaho, Montana, Wyoming, Oregon and Washington during the nesting and brooding season. Require low gradient, undisturbed, meandering mountain streams. Have been observed in the East Fork of the South Fork Salmon River. IDCDC has three sighting records for PNF (IDCDC 2009). McCorkle Creek is a high gradient stream in the Project area; not suitable habitat.
Mountain quail	<i>Oreortyx pictus</i>	Generally found in shrub dominated communities in open forests, ridge tops, mountain slopes (Marshall et al. 2003).	No	Yes	No	Habitat could be suitable in or adjacent to the area around the Project but there have not been any quail sightings around or inside the Project area.
Flammulated owl	<i>Otus flammeolus</i>	In dry open forest in mid elevation range between 3600 and 4600 feet. Nest in mixed forest dominated with Ponderosa Pine (Marshall et al. 2003).	No	Yes	No	Present on the PNF only during the breeding season and then migrate away to winter. Documented in all Ranger Districts PNF. No sightings in Project.
White-headed woodpecker	<i>Picoides albolarvatus</i>	In open ponderosa pine or mixed conifer forest dominated by ponderosa pine. It requires large trees and snags for nesting and foraging (Csuti et al. 1997, Marshall et al. 2003).	No	Yes	No	Requires areas dominated by ponderosa pines. There are no ponderosa pines in the project area (see Botanist Report), so there have been no sightings in or around the Project.
Three-toed woodpecker	<i>Picoides tridactylus</i>	Found in variety of mixed conifer forests dominated with or mixed with lodgepole pine, typically above 4500' and contains high proportion of dead trees (Csuti et al. 1997).	No	Yes	No	Habitat could be suitable in or adjacent to the area around the Project but there have not been any three-toed woodpecker sightings around or inside the Project area.
Great gray owl	<i>strix nebulosa</i>	Inhabit mature to old-growth coniferous forests adjacent to forest openings and clearings such as meadows (Csuti et al. 1997)	No	Yes	No	Do not build own nests, use nests of others. Requires old growth coniferous forests adjacent to clearings. Habitat not suitable in Project area; clearings.
Columbian sharp-tailed grouse	<i>Tympanuchus phasianellus columbianus</i>	Found in grassland or grass-shrub habitats and utilize deciduous shrubs and trees for wintering (Marshall et al. 2003)	No	Yes	No	Need low elevation mature shrub/grassland year-round. Birds are known to exist in the Weiser River drainage, none detected in PNF.
Northern goshawk	<i>Accipiter gentilis</i>	Mature stands with large trees, a high canopy closure, and an open understory. The stands are generally located on moderate slopes, benches, toe of slope, level ground, and typically close to perennial water. (Marshall et al. 2003)	No	No	No	Though sightings have occurred throughout the PNF, there have been no sightings in or around the Project. Even if goshawk were in the area, there is no identified impact Project would have on them.
Columbia spotted frog	<i>Rana luteiventris</i>	Slow moving streams, ponds, springs, and marshes with emergent vegetation, water that remains aerobic and does not freeze to the sediment (springs and creeks) are most likely necessary for winter survival in areas subject to freezing. (Washington Herp Atlas 2009)	No	No	No	There are no ponds or slow-moving stream within the Project of Lodge boundaries to support the Columbia spotted frog.

Westslope cutthroat trout	<i>Oncorhynchus clarki lewisi</i>	Habitat Comments: Small mountain streams, main rivers, and large natural lakes; requires cool, clean, well-oxygenated water; in rivers, adults prefer large pools and slow velocity areas (stream reaches with numerous pools and some form of cover generally have the highest fish densities); often occurs near shore in lakes (Spahr et al. 1991). Juveniles of migratory populations may spend 1-4 years in their natal streams, then move (usually in spring or early summer, and/or in fall in some systems) to a main river or lake where they remain until they spawn (Spahr et al. 1991, McIntyre and Rieman 1995). Many fry disperse downstream after emergence (McIntyre and Rieman 1995). Juveniles tend to overwinter in interstitial spaces in the substrate. Larger individuals congregate in pools in winter.	No	Yes	No	See comments in Wildlife and Fisheries discussion.
Swamp onion	<i>Allium madidum</i>	Habitat Comments: Seasonally wet meadows along low ground water courses and vernal pools. Elevation is 3800-6500 feet (Spahr 1991). Also found in disturbed areas and in a meadow heavily grazed by cattle and sheep (Steele 1981).	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Tolmie's onion	<i>Allium tolmiei</i> var. <i>persimile</i>	Found on dry, open ground, usually in rocky, gravelly, or clay soils.	No	No	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Candystick/ Sugarstick	<i>Allotropa virgate</i>	Candystick/sugarstick - Habitat Comments: Deep humus or partially decomposed logs, generally in the shaded areas of old growth coniferous forests at 2300-6700 feet.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Payson's milkvetch	<i>Astragalus paysonii</i>	Habitat Comments: Open places in the timber belt, burned-over forests, on decomposed granites, or other open disturbed mountainous sites on silty and ashy soils.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
White Cloud(s) milkvetch	<i>Astragalus vexilliflexus</i> var. <i>nubilus</i>	Habitat Comments: Subalpine and alpine areas on talus slopes in sagebrush communities at 10000-11000 feet (Spahr et al. 1991). Idaho Native Plant Society (1991) mentions open ridgeline and slope habitats that are sparsely vegetated; 8000-9600 feet; volcanic, granitic and metamorphic substrates.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Slender moonwort	<i>Botrychium lineare</i>	Terrestrial Habitat(s): Cliff, Forest - Conifer, Forest/Woodland, Grassland/herbaceous, Woodland - Conifer Habitat Comments: Wagner and Wagner (1994) stated that it is difficult to describe a typical habitat for this species because the known sites are so different. It has been found mostly at higher elevations (about 1500-3000 m) in mountains, but specific habitats have ranged from a meadow dominated by knee-high grass, shaded woods and woodlands, grassy horizontal ledges on a north-facing limestone cliff, and a flat upland section of a river valley. Possibly a colonizer of disturbed, early seral habitats (USFWS 2003).	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Cascade reedgrass	<i>Calamagrostis tweedyi</i>	Habitat Comments: Montane grasslands, open slopes, open coniferous forests; sometimes in burned areas, clearcuts or on ridges at mid-elevations.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Cusick camas/Cusick's camassia	<i>Camassia cusickii</i>	Habitat Comments: Occurs at low to mid elevations on steep, rocky hillsides and ridgetops in moist soils, usually along or near creeks. Often found in sagebrush scrub and among scattered ponderosa pine.	No	No	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.

Idaho douglasia	<i>Douglasia idahoensis</i>	Habitat Comments: SUMMARY: Subalpine ridges, summits, and adjacent upper slopes, on gravelly soils derived from granitic parent materials. Most populations occur on northerly-facing slopes; several appear to be restricted to lee sides of ridges, where wind-deposited snow accumulates and lasts later into summer than in adjacent areas. The subalpine vegetation is characterized by open, forb-dominated communities and woodlands dominated by white-bark pine (<i>Pinus albicaulis</i>) and subalpine fir (<i>Abies lasiocarpa</i>). There is often a high proportion of bare ground. Elevation range is about 2190-2710 m. <i>Douglasia idahoensis</i> populations typically occur on well-drained, shallow, decomposed granitic soils derived from the Idaho batholith. At least portions of one population (Square Mountain) also occurs on quartzite substrate.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Puzzling halimolobos /puzzling rockcress	<i>Halimolobos perplexa</i> var. <i>perplexa</i>	Habitat/Ecology: Occurs in reddish, clay-rich soil with scattered rock, at 530 m (1750 ft) elevation. The site is mostly flat with 30% cover of bare ground. Not much information on habitat.	No	No	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Hazel's prickly phlox	<i>Leptodactylon pungens</i> ssp. <i>Hazeliae</i>	Occurs in dry, open forest, woodland, shrubland, and grassland habitats and their intergradations.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Sacajawea's bitterroot	<i>Lewisia sacajaweaana</i>	Habitat Comments: Occurs in montane and subalpine habitats at elevations of 5,000 to 9,500 feet.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Bank monkeyflower/ hill monkeyflower	<i>Mimulus clivicola</i>	Habitat Comments: <i>Mimulus clivicola</i> is restricted to a very specific set of habitat parameters. Plants typically occur in open pockets of moist, exposed mineral soil created by natural disturbances (erosion, big-game activity, etc.) or human-caused disturbances (roadcuts, etc.). They are almost exclusively found on southern exposures (southeast, south, southwest) with steep slopes (generally > 60%) in microhabitats that hold moisture during the spring.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Whitebark Pine	<i>Pinus albicaulis</i>	Terrestrial Habitat(s): Forest - Conifer, Forest/Woodland, Woodland - Conifer Habitat Comments: Within montane forests and on thin, rocky, cold soils at or near timberline. 1300 - 3700 m (Flora of North America 1993). In moist mountain ranges, whitebark pine is most abundant on warm, dry exposures; but in semiarid ranges, it becomes prevalent on cool exposures and moist sites (Burns and Honkala, 1990). Although its role in the plant community is changing, whitebark pine historically dominated many of the upper subalpine plant communities of the western United States and was a major component of subalpine forests in the northern Rocky Mountains, the northern Cascades, the Blue Mountains, and the Sierra Nevada.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Radiate goldenweed /snake river goldenweed	<i>Pyrrocoma radiata</i> (= <i>Haplopappus radiatus</i>)	Habitat Comments: A grazing-modified sagebrush/grassland community. Usually a specific soil type that is slightly to very calcareous and often overlays a shale formation (FWS, 1995). Steep, rocky hillsides (Idaho Native Plant Society, 1991).	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Bartons' blackberry	<i>Rubus bartonianus</i>	Habitat Comments: At least partially shaded in shrub communities on higher riparian terraces along streams and in shrub-dominated ephemeral stream beds, so water is available in abundance at least seasonally. Also occasionally on lower slopes in mixed shrub communities, but never far from the riparian zone. Soils derived from basalt parent materials (ISSSSP 2010).	Yes	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.

Tobias' saxifrage	<i>Saxifraga bryophora</i> var. <i>tobiasiae</i>	Habitat Comments: Tobias' saxifrage occurs in openings in subalpine forest communities, classified as the <i>Vaccinium globulare</i> phase of the <i>Abies lasiocarpa</i> / <i>Xerophyllum tenax</i> habitat type. Within this community it occurs in microhabitats characterized by considerable amounts of bare soil and substrate instability. The cause of the instability has two sources: earth cores created by pocket gopher activity and meltwater channels between bedrock or areas stabilized by perennial vegetation. Plants are found on the flat-to-gently sloping portions of the meltwater channels. It does not occur in the steeper channel sections, where the substrate is continually subject to downslope movement, nor in gravelly depressions where ephemeral ponding takes place. Although saturated early in the growing season, soils at all sites are dry by about mid-July. Populations occur mostly on aspects other than north. Elevations of known populations range from 7,400 to 8,400 feet. The underlying geology is uniformly intrusive, although several rock-types are present, including quartz monzonite, granodiorite, and quartz diorite.	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Tolmie's saxifrage	<i>Saxifraga tolmiei</i> var. <i>ledifolia</i>	Native Habitat: Meadows or moist rocky areas in the mountains	No	Yes	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.
Short-slyle tofieldia	<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>	A plant of wet meadows, streambanks and bogs. It may also be found on moist alpine ridges.	No	No	No	See Botanist report on Field Survey of Project site and site of rebuilt Lodge. No TES or State Sensitive Plants found.

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Citation for data on website including State Distribution, Watershed, and Reptile Range maps:

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: February 25, 2017).

Citation for Bird Range Maps of North America:

Ridgely, R.S., T.F. Allnutt, T. Brooks, D.K. McNicol, D.W. Mehlman, B.E. Young, and J.R. Zook. 2003. Digital Distribution Maps of the Birds of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Bird Range Maps of North America:

"Data provided by NatureServe in collaboration with Robert Ridgely, James Zook, The Nature Conservancy - Migratory Bird Program, Conservation International - CABS, World Wildlife Fund - US, and Environment Canada - WILDSpace."

Citation for Mammal Range Maps of North America:

Patterson, B.D., G. Ceballos, W. Sechrest, M.F. Tognelli, T. Brooks, L. Luna, P. Ortega, I. Salazar, and B.E. Young. 2003. Digital Distribution Maps of the Mammals of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Mammal Range Maps of North America:

"Data provided by NatureServe in collaboration with Bruce Patterson, Wes Sechrest, Marcelo Tognelli, Gerardo Ceballos, The Nature Conservancy-Migratory Bird Program, Conservation International-CABS, World Wildlife Fund-US, and Environment Canada-WILDSpace."

Conservation International-CABS, World Wildlife Fund-US, and Environment Canada-WILDSpace."

Citation for Amphibian Range Maps of the Western Hemisphere:

IUCN, Conservation International, and NatureServe. 2004. Global Amphibian Assessment. IUCN, Conservation International, and NatureServe, Washington, DC and Arlington, Virginia, USA.

Acknowledgement Statement for Amphibian Range Maps of the Western Hemisphere:

"Data developed as part of the Global Amphibian Assessment and provided by IUCN-World Conservation Union, Conservation International and NatureServe."

(i) Sites Included in or Eligible for Inclusion in The National Register of Historic Places

There are no sites for either the Big Creek Lodge or Big Creek Hydroelectric Project that are included in or eligible for inclusion in The National Register of Historic Places.

(j) Wilderness and Roadless Areas

The Big Creek Lodge permit area and Big Creek Hydro Projects are proximate to but outside of the FCRNRW boundary. In accordance with the Wilderness Act, designated areas are to be managed "... for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness ..." (Wilderness Act). The impact of the Big Creek Project on the wilderness experience is minimal to non-existent, especially in comparison to the use of other potential energy sources (e.g. increased reliance on propane).

(k) Wild and Scenic Rivers

McCorkle Creek flows into the headwaters of Big Creek which when it crosses the boundary is within the FCRNRW. Big Creek is a tributary of the Middle Fork of the Salmon River, which has Wild and Scenic River status. McCorkle Creek is small (3' wide above the diversion), has a well-established and stable stream bed, and has supplied diversion water for hydro- power generation since 1968. There is no evidence that the water quality as stated in the present licensing document (Project No. 10721-001) would pose a risk to Big Creek or Middle Fork water quality. McCorkle Creek is not under consideration for entry into Wild and Scenic Rivers status.

(l) Geology and Soils

The dominant landforms in Management Area 13-Big Creek/Stibnite are glaciated mountains and uplands, frost-churned uplands, fluvial mountains, and depositional lands. Slope gradient averages 10-80% in the glaciated mountains, 15-40% in the frost-churned uplands, 30-80% in the fluvial mountains, and 0-20% in the depositional lands. The area is predominantly underlain by granites of the Idaho Batholith and associated metamorphic roof pendants, mostly quartzite, marble, and calc-silicates. Soils generally have moderate to high surface erosion potential and low to moderate productivity (USDA Forest Service 2003, pp. 258).

(m) Wetlands

Based on a review of the National Wetlands Inventory (NWI) maps as a source document, the corral wetland is approximately 0.60 acres in size (approximate dimensions 0.05 miles long along the road and 0.02 miles wide) and, from its estimated center (45.126757 N -115.324417 S), located 0.09 miles S of the powerhouse (outside of the Project area) and W of Big Creek Road. The pasture wetland is approximately 6.63 acres in size (approximate dimensions 0.2 miles long and 0.07 miles wide at the widest place), and from its estimated center (45.126295 N -115.323548 W), located 0.13 miles SSE of the powerhouse (outside of the Project area) and E of Big Creek Road., Both are wetlands within the boundaries of the FS Special Use Permit for Big Creek Lodge. There are no wetlands within the Big Creek Project boundaries. The corral and pasture wetlands carry the designation PEM1C. The code description is as follows:

P System PALUSTRINE: The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below .05 ppt.

EM Class EMERGENT: Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

1 Subclass PERSISTENT: Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.

C Water Regime SEASONALLY FLOODED: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.

The water source for these wetlands appears to be runoff from the bordering hillsides; flowing water following appropriate contours on the south boundary of the Big Creek Lodge site is noticeable in early to mid-season. Once the flow dries up, observations of the last two years have shown ground moisture sufficient to support vegetation in the pasture area until later in the season.

The corral and pasture, fenced by native buck and rail fencing, are listed as site improvements in the Special Use Permit, and are managed per a Pasture Management Plan that is included in the permit as Exhibit B. The plan is based on the Animal Unit Month basis, defined as the forage consumed by one animal for 30 days, and regulates the number of head of stock that can be grazed by the public and for the benefit of guests of Big Creek Lodge.

Big Creek Lodge, with its' corral and pasture, has been operating at this FS site since it was built in 1934. With the FS Guard Station co-located in the same valley, FS personnel are well acquainted with the past operations of the lodge and the new permit (for the Lodge) is reflective of lodge operating measures that have proven to be viable and protective of FS property, including those areas that are designated wetlands.

Another designated wetland, located to the east of the Big Creek Airstrip on Forest Service lands, carries the same code (PEM1C) as the wetlands previously described, is 13.62 acres in size, begins 0.14 miles NE of the powerhouse (outside of the Project area) , is 0.51 miles long and 0.06 miles wide (approximate coordinates to center 45.132858 N -115.320069 W). McCorkle Creek and its watershed area is one of a couple potential feed sources for the wetland with the higher flows during the early to midseason period. Surface water is gone later in the season, but ground moisture supports vegetation until later season.

Vegetation in the wetland areas is likely a mixture of native grasses with some non-native species like timothy due to livestock grazing.

The Big Creek Project is outside of all the wetland areas described above, and was installed and has operated since 1968 with no appreciable negative impacts.

Big Creek Lodge Wetlands



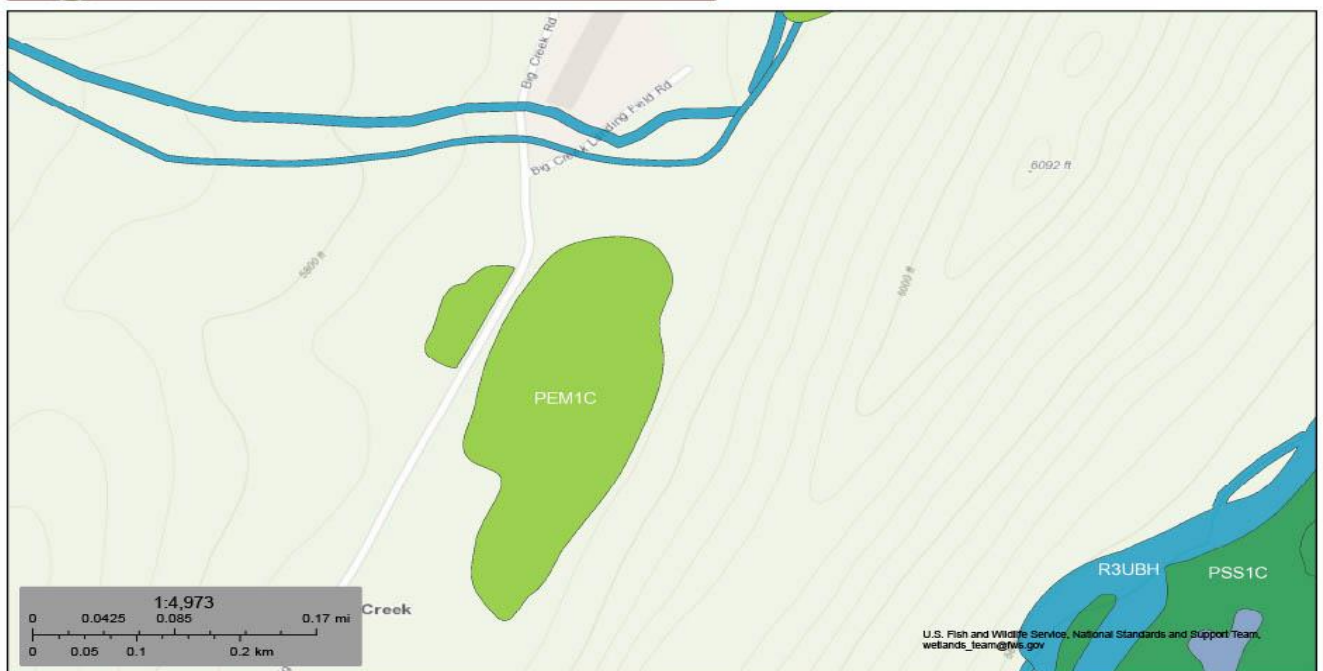
Wetlands

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Wetland | Freshwater Forested/Shrub Wetland | Other |
| | Freshwater Pond | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Big Creek Lodge Wetlands - TOPO



Wetlands

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Wetland | Freshwater Forested/Shrub Wetland | Other |
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National Wetlands Inventory (NWI)
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October 28, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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October 28, 2019

Wetlands

- Estuarine and Marine Deepwater
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National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

(n) Air

The Big Creek Project is in Valley County, Idaho. Particulate matter is the primary pollutant of concern related to Forest Management. Between 1995 and 1999, emissions trends in Valley County improved for PM₁₀, while PM_{2.5} emissions remained constant. The most common sources of particulate matter within the county were wildfire, prescribed fire, and fugitive dust from unpaved roads. There were no point sources within the county (USDA Forest Service 2003 pp. 258).

The Big Creek Project is a non-emissions energy source, and with the improvement in generating capacity (.075 kW to 1-5 kW)) derived from upgrading the turbine/generator unit, emissions will be reduced from a propane fuel backup/auxiliary generator. The generating capacity of the hydro unit will be adequate to meet lodge electrical requirements for a majority of the operating season. With information from the Flow Study, the monitoring of in-stream flow, and the penstock flowmeter to control water flow to the turbine, the 50% downstream of the diversion flow requirement will be satisfied while allowing maximum hydropower production.

- (2) A Description of the expected environmental impacts resulting from the proposed construction or development of the Project, including any impacts from any proposed changes in capacity and mode of operation of the project if it is already generating electricity, and an explanation of the specific measures proposed by the applicant, the agencies consulted, and others to protect and enhance environmental resources and values and to mitigate adverse impacts of the project on them.

The Project is fully developed with no changes planned. The replacement of the old and very inefficient hydroelectric generator with the new and highly efficient equipment previously described maximizes the generation capacity of the system over the entire operating season (higher stream flow early and less flow later in the season). This reduces the operating time of the back-up propane fuel generator, minimizing fossil fuel emissions.

The installation of the stream flow measuring staff gauge in combination with an ultrasonic flow meter on the inlet to the Pelton wheel turbine provides more positive control to manage the 50% stream flow requirement downstream of the diversion. In addition, the staff gauge will provide the means to measure stream flow in McCorkle Creek throughout the entire operating season. This data will be helpful in making future water management decisions for the McCorkle Creek drainage.

Commitments:

- a. One study requested by the US Forest Service, Payette National Forest, in order to evaluate compliance with Forest Plan Standard SWST06, was for the IAF to work with the Forest Service to collect stream flow information in McCorkle Creek. The study has already been initiated and includes completing the calibration process for the already installed streamflow staff gauge above the Project diversion and recording flow data on a regular basis throughout the Project operating season. Data will be collected over multiple seasons to establish maximum, minimum, and mean average flow rates during the periods of expected hydropower operation.
- b. IAF will work with the Payette National Forest Invasive Species Specialist and develop inspection and chemical treatment recommendations for Lodge personnel to assure noxious weeds do not become a problem in the Project and Lodge areas.

McCorkle Creek Upstream of the Diversion prior to Staff Gauge Installation



Staff Gauge Measuring Total Stream Flow Above the Diversion



(3) Any additional information the applicant considers important.

The Project, per the FS Special Use Permit (ID-KRL202), occupies an area approximately 0.4 acres in size that begins at a 2' wide X 3' long X 2' high in-bank diversion, a 12' wide right of way for the buried 1340' of 4" penstock and steep ATV access trail, a 20' X 22' footprint for the log generator house and a 10' wide X 350' long area for the buried electrical line from the generator house to the Big Creek Lodge. The hydroelectric generator unit will generate 1 - 5 kW depending on the water available to drive the turbine.

The Project has a very small physical footprint and very small, if not negligible, negative impacts on the Big Creek valley; its' fish, wildlife, vegetative cover, and environment.

2' wide x 3' long x 2' high in-bank diversion



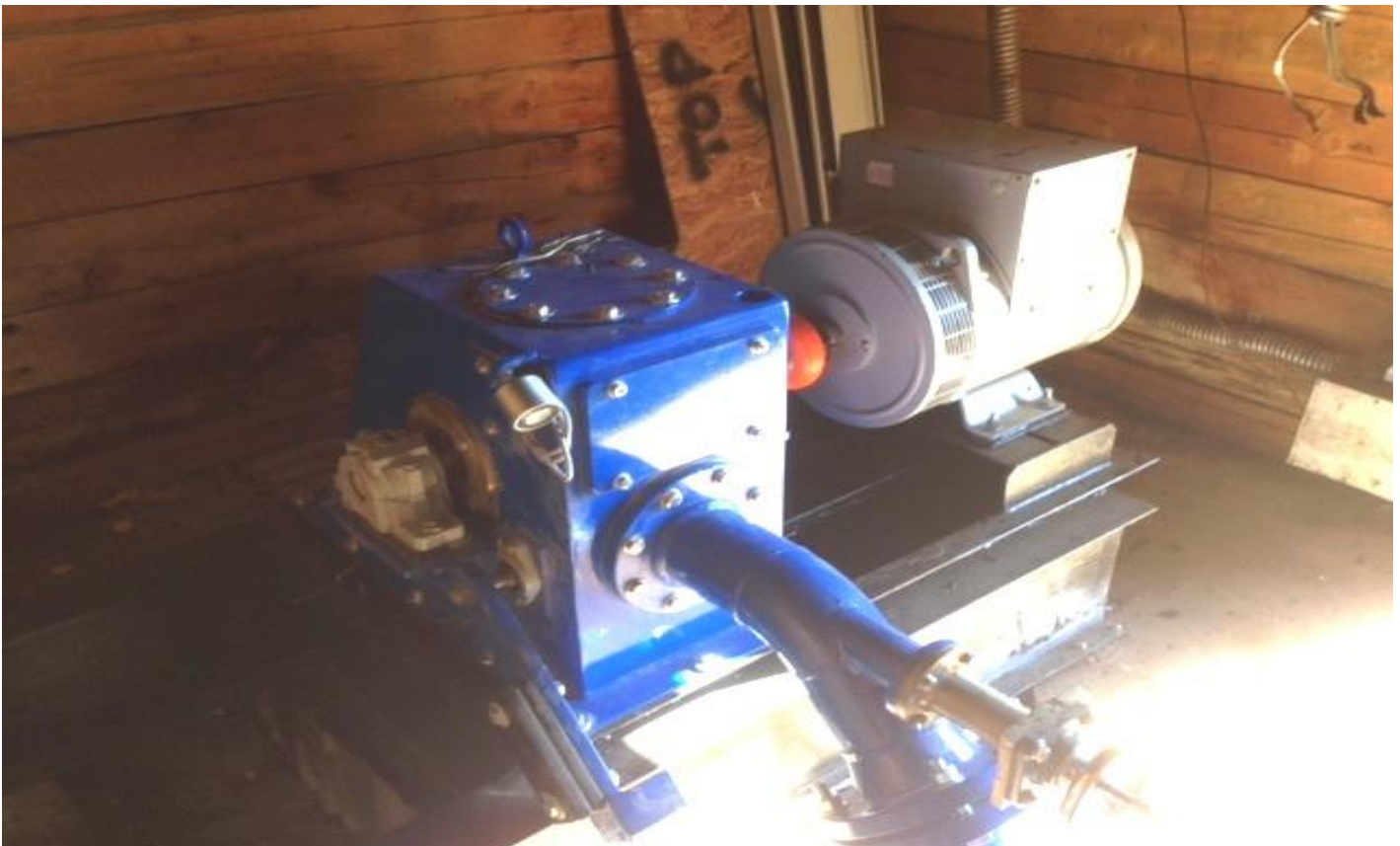
12' wide right-of-way for the buried 1340' of 4" penstock and steep ATV access trail to the diversion



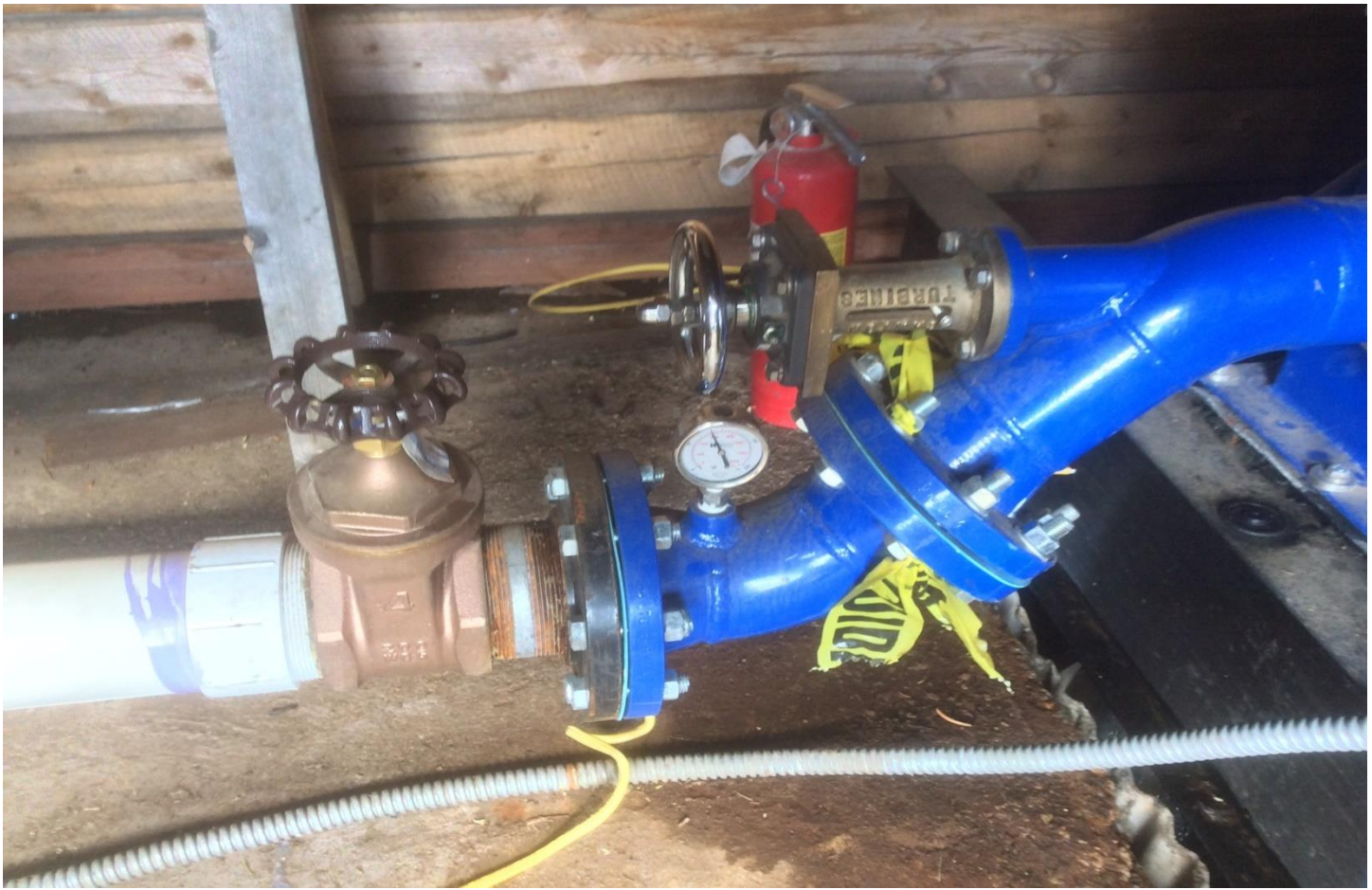
20' x 22' footprint for the log generator house



New Turbine and Generator



Pelton Wheel Turbine Inlet Isolation Valve and Needle Nozzle Control Valve



(4) References Cited:

Bailey, Robert G. *Description of the Ecoregions of the United States*. 1980.
<https://www.fws.gov/wetlands/Documents/Description-of-the-Ecoregions-of-the-United-States.pdf>.
Accessed 19 February 2017.

Big Creek Project (P-10721-001)

Kaminski, T., and J. Hansen. 1984. *Wolves of Central Idaho*. Montana Cooperative Wildlife Research Unit, U.S. Fish and Wildlife Service, Technical report or bulletin.

USDA Forest Service. 2003. Forest Management Area 13 Big Creek/Stibnite. Payette National Forest Land and Resource Management, pp. III-256-262.

(US Fish and Wildlife Service (FWS) Recovery Outline - Sept. 2005).

FSM2670.22. 2005. *FSM 2600 - Wildlife, Fish, and Sensitive Plant Habitat Management, Chapter 2670-Threatened, Endangered and Sensitive Plants and Animals*, USDA Forest Service Manual. pp. 4.

(US Fish and Wildlife Service (FWS) Recovery Outline - Sept. 2005).

“Wilderness Act” (16 U.S.C. 1121 (note))

The Payette National Forest (N.F.), The Golden Hand No. 3 and No. 4 Lode Mining Claims Proposed Plan of Operation: EIS

Reference document from the Payette NF Program Fisheries Files with the subject “McCorkle Creek ESA Listed Species Presence/Absence, Flow Data”, dated January 28, 2016

Botanical Field Survey conducted by the Payette National Forest Botanist in September of 2012

The Idaho Statewide Comprehensive Outdoor Recreation Plan 2018 (SCORP)

Forest Management Area 13 - Big Creek/Stibnite - in the PNF Land and Resource Management Plan (2003)

Payette National Forest Website

Intermountain Region (R4) Threatened, Endangered, Proposed, and Sensitive Species, June 2106, Known/Suspected Distribution by Forest

US Forest Service Special Use Permit KRL202

The U.S. Fish and Wildlife Service, ECOS report “Listed Species Believed to or Known to Occur in Idaho”

Idaho State Wildlife Action Plan

Interagency Grizzly Bear Committee 2007

Grizzly Bear Recovery Plan, Supplement: Bitterroot Ecosystem Recovery Plan Chapter” and U.S. Fish and Wildlife Service, Endangered Species – Mammal

DEPARTMENT OF THE INTERIOR Fish and Wildlife Service 50 CFR Part 17 RIN 1018–AE00 Endangered and Threatened Wildlife and Plants: Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana AGENCY: Fish and Wildlife Service, Interior.

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southern Selkirk Mountains Population of Woodland Caribou AGENCY: Fish and Wildlife Service, Interior

USDI Fish and Wildlife Service 1994

Canada Lynx Conservation Assessment and Strategy 2nd Edition August 2000 (as amended Oct. 23-24 2001, May 6-8, 2003 and Nov. 12-13, 2003)

USDA Forest Service National Forests in Montana, and parts of Idaho, Wyoming, and Utah March 2007 Northern Rockies Lynx Management Direction Record of Decision.

Amended Lynx Conservation Agreement between the Forest Service and the FWS (USDA FS and USDI FWS 2006)

Federal Register Vol. 79 Friday, No. 177 September 12, 2014 Part II Department of the Interior Fish and Wildlife Service 50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary

US Fish and Wildlife Service (FWS) Recovery Outline - Sept. 2005

DEPARTMENT OF THE INTERIOR Fish and Wildlife Service [FWS–R1–ES–2015–N151; FXES11130100000–156–FF01E00000] Endangered and Threatened Wildlife and Plants; Recovery Plan for the Coterminous United States Population of Bull Trout AGENCY: Fish and Wildlife Service, Interior.

2015 NatureServe, 4600 N. Fairfax Dr., 7th Floor, Arlington Virginia 22203, U.S.A

Management Area 13-Big Creek/Stibnite, Payette National Forest

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

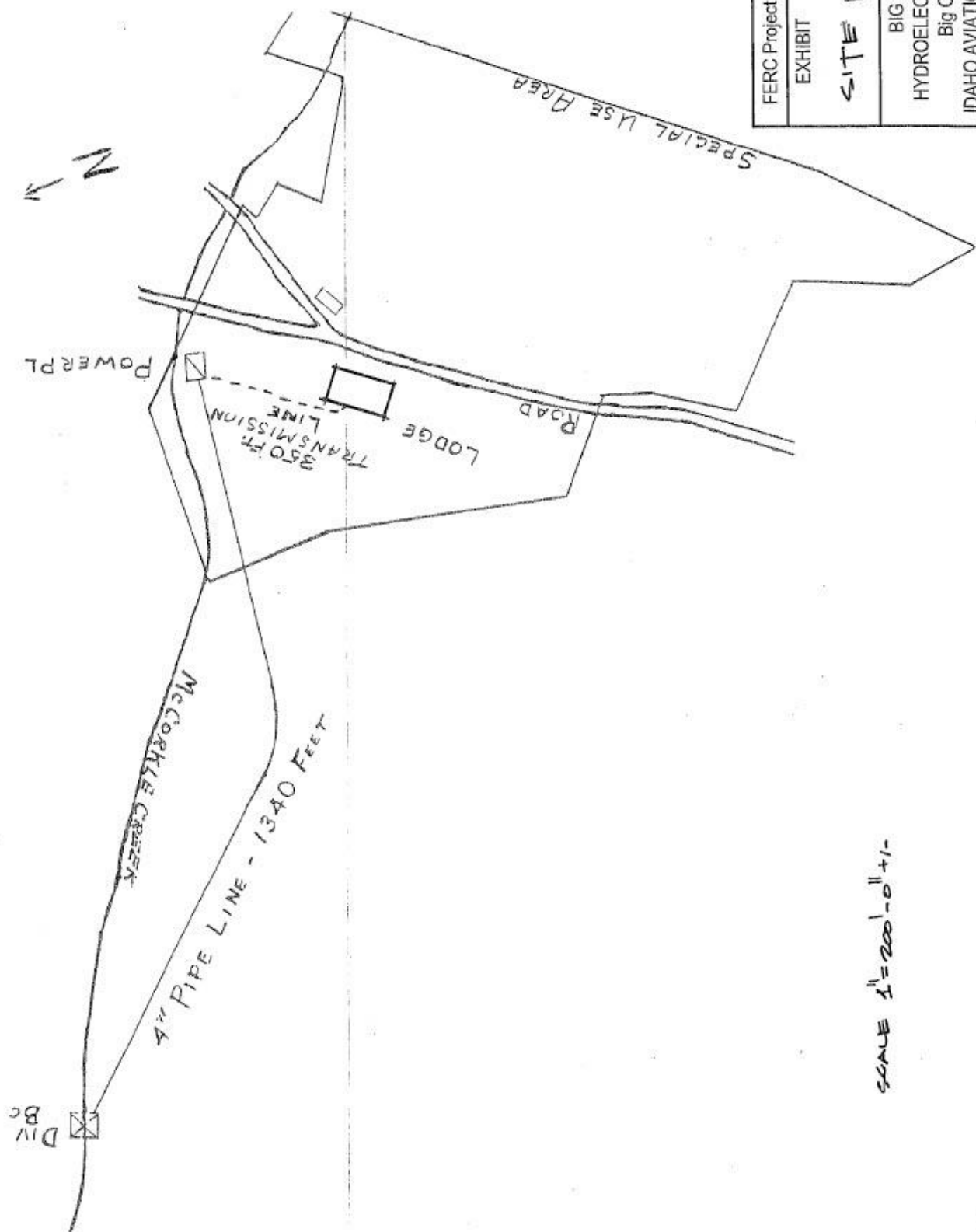
Preliminary License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

EXHIBIT F – GENERAL DESIGN DRAWINGS

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537

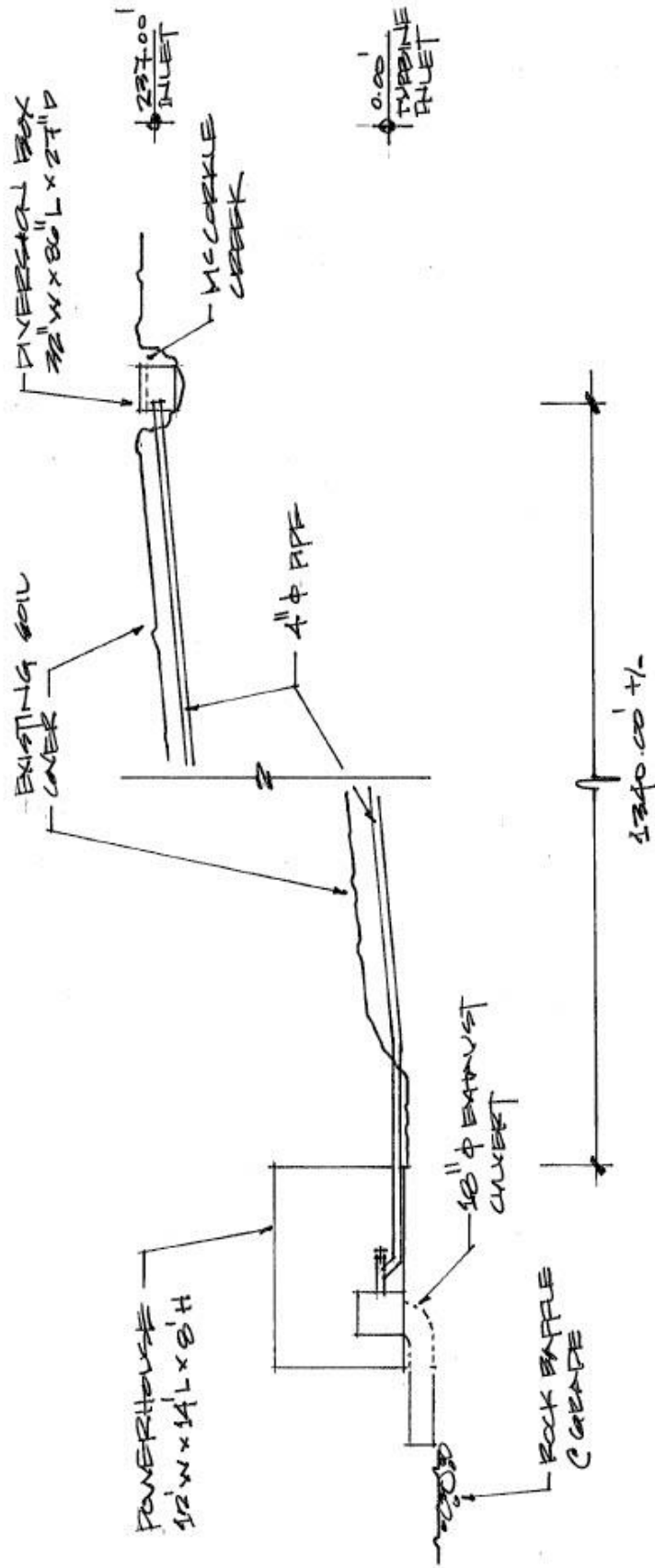
info@idahoaviationfoundation.org

November 18, 2019



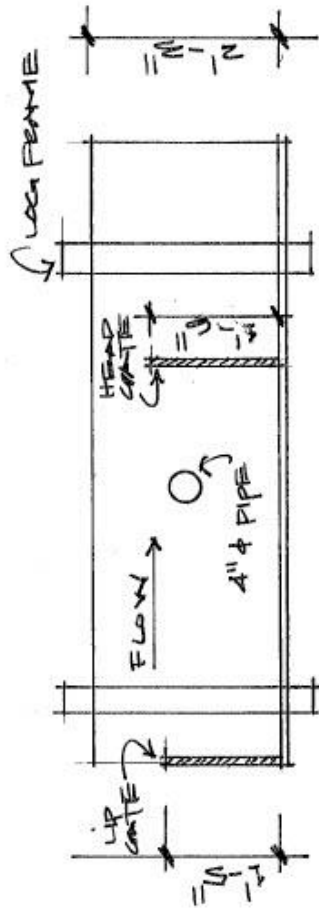
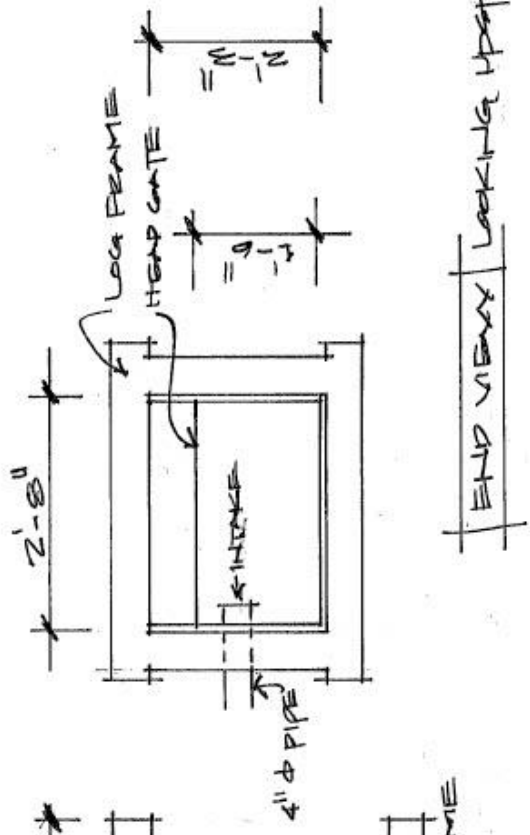
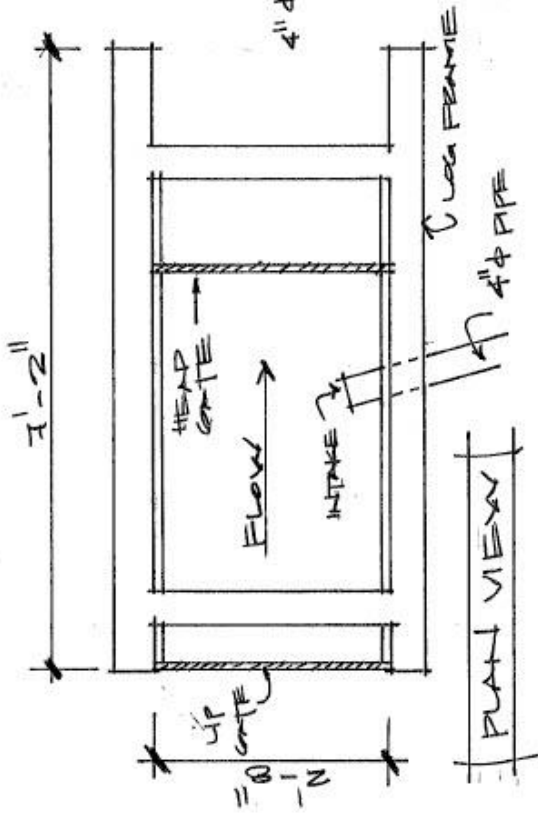
SCALE 1" = 200' ± 1'

FERC Project No. 10721
EXHIBIT F-1
SITE PLAN
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID IDAHO AVIATION FOUNDATION



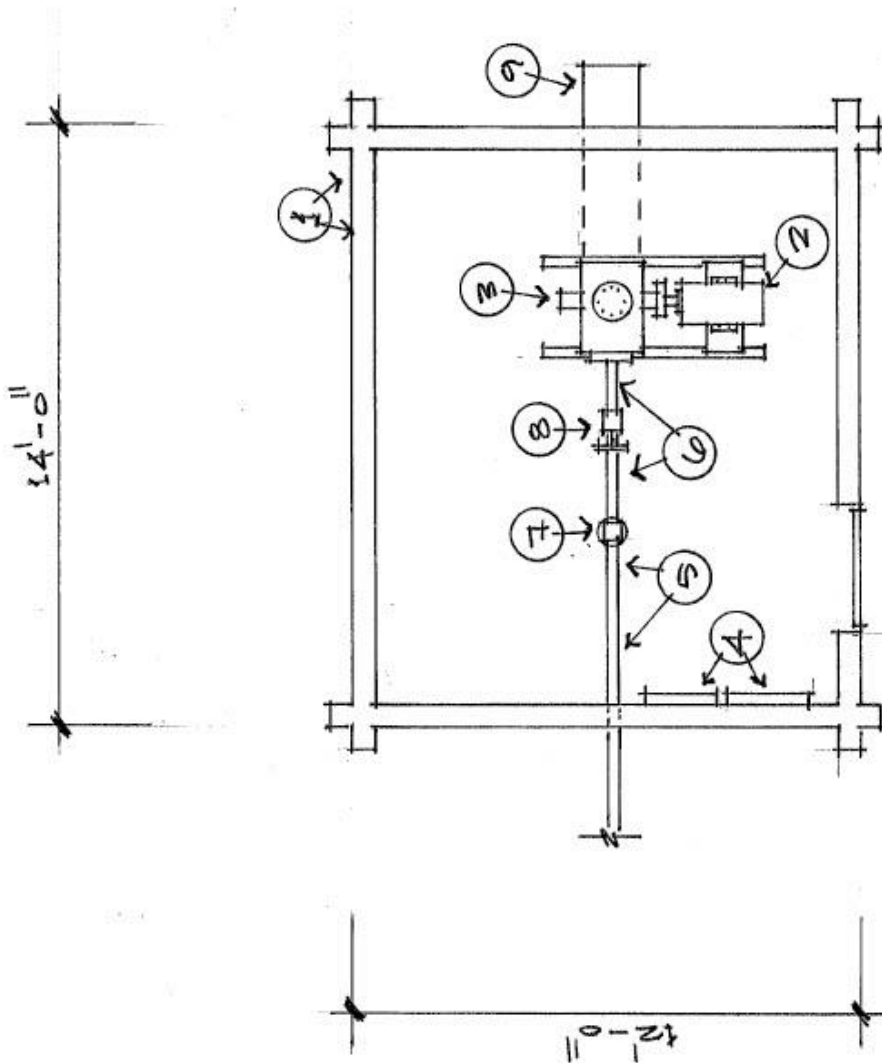
FERC Project No. 10721
EXHIBIT F-2
PROFILE
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID IDAHO AVIATION FOUNDATION

SCALE: VERTICAL H.T.S.
HORIZ. H.T.S.



FERC Project No. 10721
EXHIBIT F-3
DIVERSION BOX DETAILS
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID IDAHO AVIATION FOUNDATION

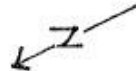
SCALE: 1/2" = 1'-0"



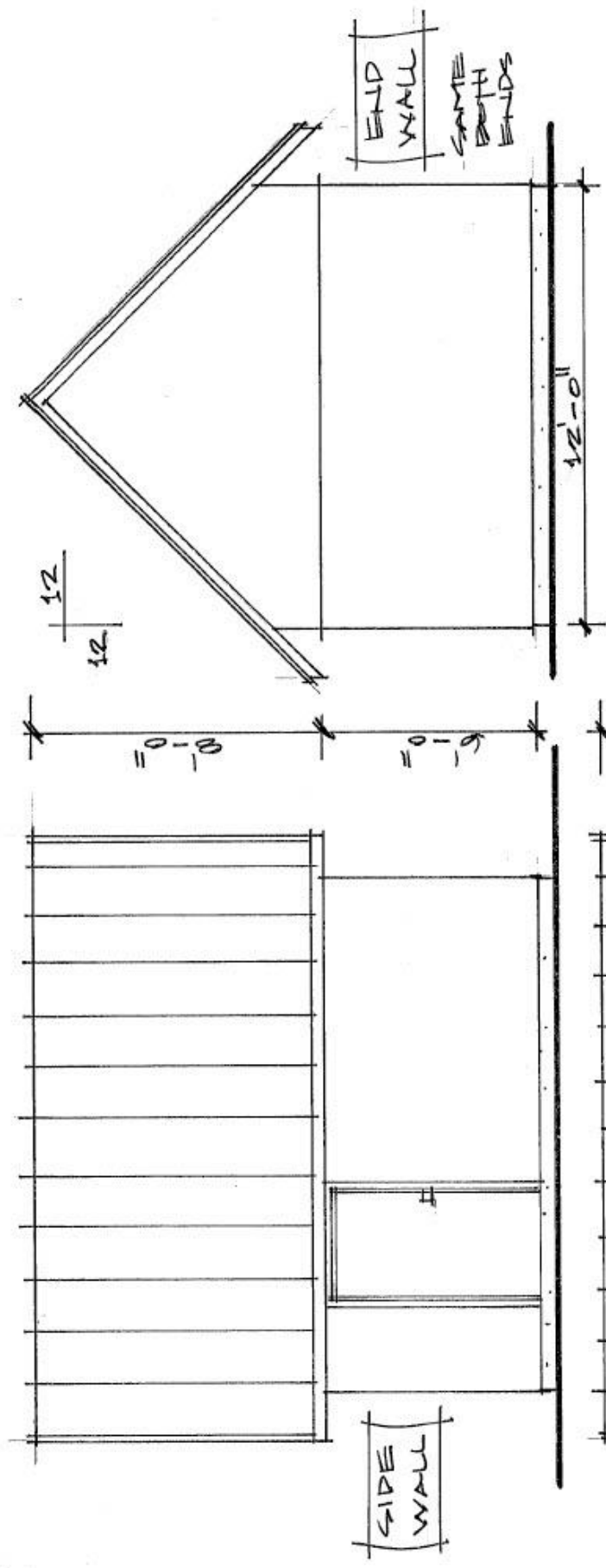
KEY NOTES:

1. LOG STRUCTURE
2. GENERATOR: "MAGNAPLUS" 8 KW
3. TURBINE: "ANYA HYDRO" 8 KW
4. ELECT & GEN. LOAD PANELS
5. PVC 4" PIPE
6. STEEL 4" PIPE
7. 4" ISOLATION VALVE
8. TURBINE NOZZLE VALVE
9. 48" DI EXHAUSTY CONVEYER

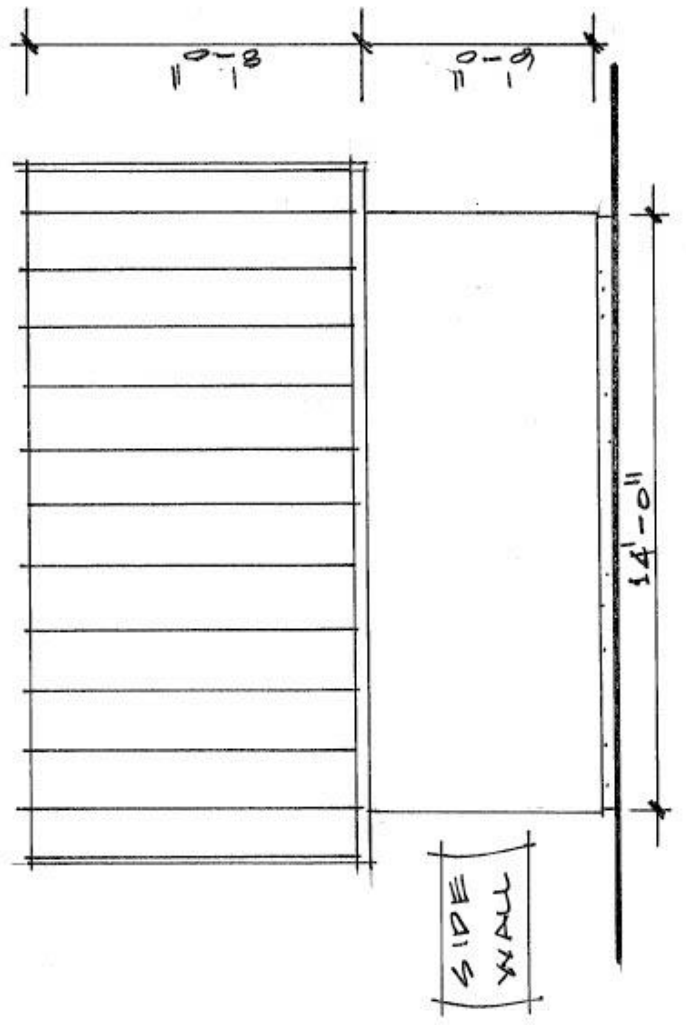
FERC Project No. 10721
EXHIBIT F-4
POWERHOUSE FLOOR PLAN
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID
IDAHO AVIATION FOUNDATION



SCALE: 1/4" = 1'-0"

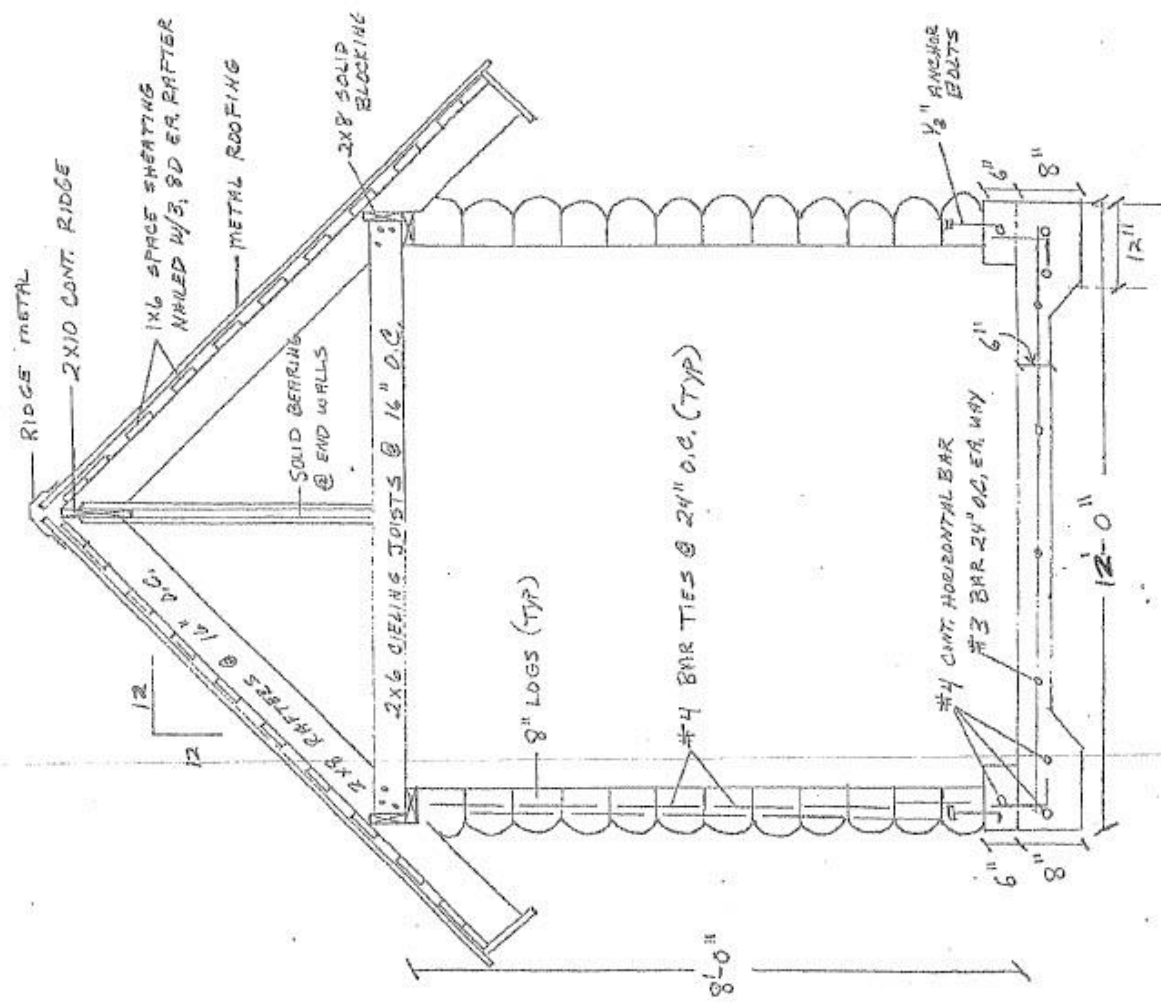


- MATERIALS:
- 6" LOG WALLS
 - PRE-FINISHED GREEN METAL ROOFING
 - CONCRETE FOUNDATION



FERC Project No. 10721
EXHIBIT F-5
POWERHOUSE ELEVATIONS
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID IDAHO AVIATION FOUNDATION

SCALE: 1/4" = 1'-0"



FERC Project No. 10721
EXHIBIT F-6 POWERHOUSE SECTION
BIG CREEK HYDROELECTRIC PROJECT Big Creek, ID IDAHO AVIATION FOUNDATION

SCALE: 3/8" = 1'-0"

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA

Preliminary License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

EXHIBIT G – PROJECT MAPS

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537
info@idahoaviationfoundation.org

November 18, 2019



PORTER'S LAND SURVEYING

921 S. Curtis Road
Boise, Idaho 83709

(208) 344-3650

August 26, 1993
Job No. 8326

LEGAL DESCRIPTION OF THE CENTERLINE OF A 12 FOOT WIDE PERMANENT PENSTOCK EASEMENT FOR BIG CREEK LODGE

The legal description of the centerline of a 12 foot wide permanent penstock easement, located in the North 1/2 of the Southwest 1/4 of Section 26, Township 21 North, Range 9 East, Boise Meridian; Valley County, Idaho; more particularly described as follows:

Beginning at a Brass Cap Monument marking the Section Corner common to Sections 26, 27, 34, and 35, T.21 N., R.9 E. B.M.;
thence, along the section line common to said Sections 26 and 35, S 89°56'00"E 1323.43 feet to a 2" dia. Iron Pipe, marking the West 1/16 Corner common to said Sections 26 and 35;
thence, leaving said section line, N 17°26'02"E 2392.33 feet to a point; also being the REAL POINT OF BEGINNING;
thence, S 65°25'39"W 80.12 feet to a point;
thence, S 72°01'50"W 239.68 feet to a point;
thence, S 89°18'11"W 207.76 feet to a point;
thence, N 81°46'17"W 288.36 feet to a point;
thence, N 52°24'24"W 358.48 feet to a point;
thence, N 46°38'24"W 110.12 feet to a point;
thence, N 0°01'25"E 37.06 feet to a point; being the terminus of said 12 foot wide easement;
said parcel contains 15,859 sq.ft. or 0.36 acres more or less;
said parcel is subject to any other easements of record or in use.





PORTER'S LAND SURVEYING

921 S. Curtis Road
Boise, Idaho 83709

(208) 344-3650

August 26, 1993
Job No. 8326

LEGAL DESCRIPTION OF A PERMANENT POWERHOUSE SITE EASEMENT FOR BIG CREEK LODGE

The legal description of a permanent building easement, located in the Northeast 1/4 of the Northeast 1/4 of the Southwest 1/4 of Section 26, Township 21 North, Range 9 East, Boise Meridian; Valley County, Idaho; more particularly described as follows:

Beginning at a Brass Cap Monument marking the Section Corner common to Sections 26, 27, 34, and 35, T.21 N., R.9 E. B.M.;
thence, along the section line common to said Sections 26 and 35, S 89°56'00"E 1323.43 feet to a 2" dia. Iron Pipe, marking the West 1/16 Corner common to said Sections 26 and 35;
thence, leaving said section line, N 17°59'17"E 2398.33 feet to a point; also being the REAL POINT OF BEGINNING;
thence, S 70°00'00"W 22.00 feet to a point;
thence, N 20°00'00"W 20.00 feet to a point;
thence, N 70°00'00"E 22.00 feet to a point;
thence, S 20°00'00"E 20.00 feet to the REAL POINT OF BEGINNING;
said parcel contains 440 sq.ft. more or less;
said parcel being subject to any other easements of record or in use.





PORTER'S LAND SURVEYING

921 S. Curtis Road
Boise, Idaho 83709

(208) 344-3650

August 26, 1993
Job No. 8326

LEGAL DESCRIPTION OF THE CENTERLINE OF A 10 FOOT WIDE PERMANENT ELECTRICAL EASEMENT FOR BIG CREEK LODGE

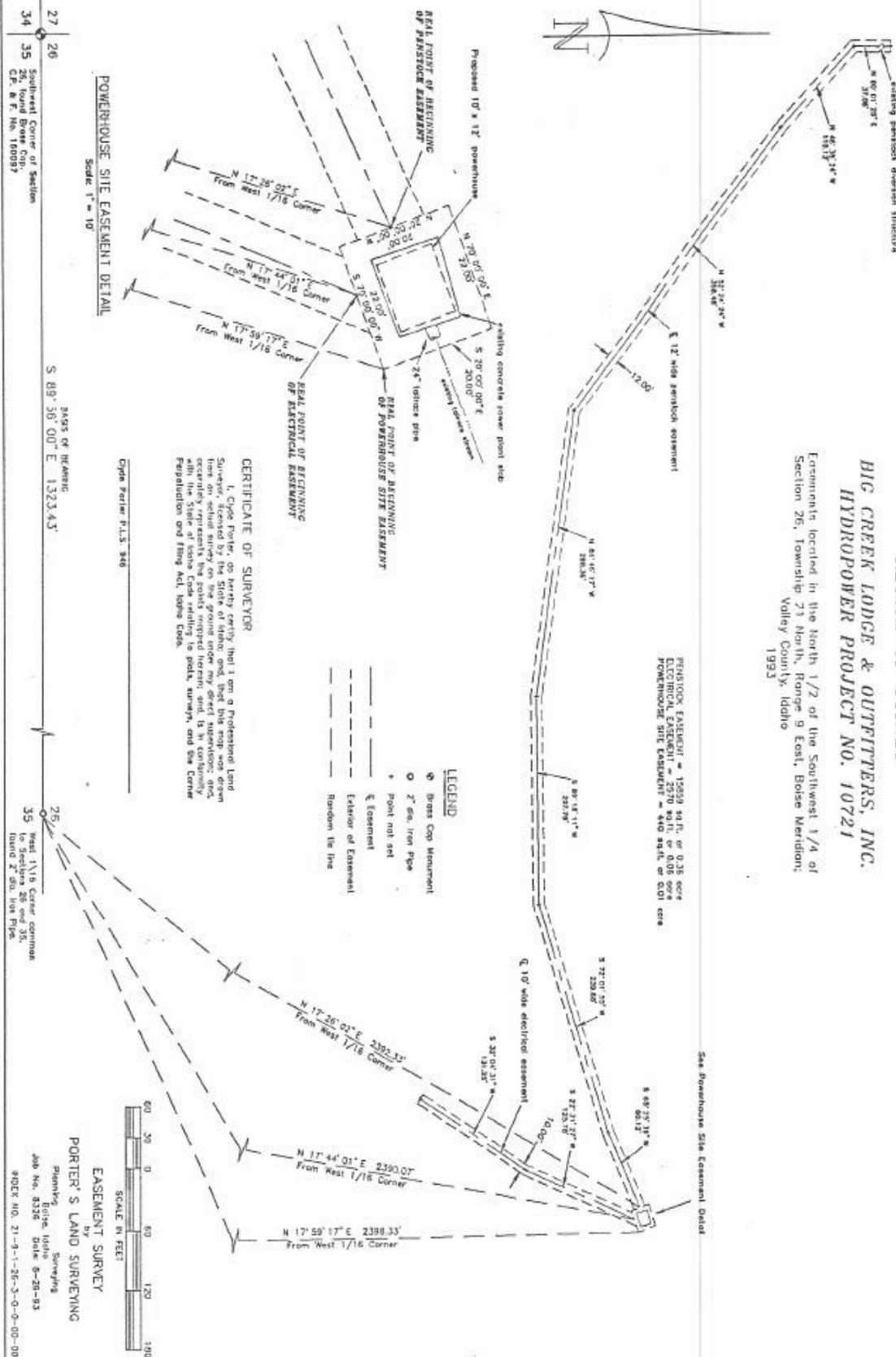
The legal description of the centerline of a 10 foot wide permanent electrical easement, located in the North 1/2 of the Northeast 1/4 of the Southwest 1/4 of Section 26, Township 21 North, Range 9 East, Boise Meridian; Valley County, Idaho; more particularly described as follows:

Beginning at a Brass Cap Monument marking the Section Corner common to Sections 26, 27, 34, and 35, T.21 N., R.9 E. B.M.;
thence, along the section line common to said Sections 26 and 35, S 89°56'00"E 1323.43 feet to a 2" dia. Iron Pipe, marking the West 1/16 Corner common to said Sections 26 and 35;
thence, leaving said section line, N 17°44'01"E 2390.07 feet to a point; also being the REAL POINT OF BEGINNING;
thence, S 22°31'27"W 125.78 feet to a point;
thence, S 32°04'31"W 131.25 feet to a point; being the terminus of said 10 foot wide easement;
said parcel contains 2,570 sq.ft. or 0.06 acres more or less;
said parcel is subject to any other easements of record or in use.



RECORD OF SURVEY BIG CREEK LODGE & OUTFITTERS, INC. HYDROPOWER PROJECT NO. 10721

Easements located in the North 1/2 of the Southwest 1/4 of Section 26, Township 71 North, Range 9 East, Boise Meridian, Valley County, Idaho 1993



CERTIFICATE OF SURVEYOR

I, Clyde Porter, do hereby certify that I am a Professional Land Surveyor, licensed by the State of Idaho, and that this map was drawn from an actual survey on the ground under my direct supervision; and, accurately represents the points surveyed herein; and, is in conformity with the State of Idaho Civil Engineering Law, and the Survey and Mapping Act, Idaho Code.

- LEGEND**
- ⊕ Brass Cap Monument
 - 2" dia. Iron Pipe
 - + Point not set
 - Easement
 - Exterior of Easement
 - Random tie line



EASEMENT SURVEY
BY
PORTER'S LAND SURVEYING
Planning Boise, Idaho
Job No. 8328 Date 8-20-93
REC'D NO. 21-9-1-26-3-0-0-00-00

27
34
35
Southwest Corner of Section 26, Township 71 North, Range 9 East, Boise Meridian, Valley County, Idaho 1993

S 89° 30' 00" E 1323.43'

West 1/16 Corner monument
found 2" dia. iron pipe

USFS Special Use Permit

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE

SPECIAL USE PERMIT

Authority: FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976

J. CURTIS EARL IDAHO AVIATION FOUNDATION, INC. of PO Box 2016 , Eagle ID 83616-9110 (hereinafter "the holder") is authorized to use or occupy National Forest System lands in the Payette National Forest subject to the terms and conditions of this special use permit (the permit) .

This permit covers .4 acres and is described as being located in T.21 N., R.9E., section 26, ("the permit area"), as shown on the map attached as Appendix A . This permit issued for the purpose of :

Operation and maintenance of the Big Creek Hydropower Project (P-10721). The project includes a water diversion structure , penstock, powerhouse, transmission line and access road associated with the Hydroelectric facilities on National Forest System lands.

The facilities are described below:

A log head-box diverts water from Mccorkle Creek into a 4" buried penstock that runs approximately 1340 feet to a small log building (power house). There is also 350 feet of buried power transmission line from the power house to the lodge.

Access to the diversion structure is by ATV on a two-track dirt road accessed from the lodge area.

The water right for this use is issued to the U.S. Department of Agriculture, Forest Service, as number 77-07334. This right is issued for use of .75 cfs from January 1 through December 31 .

TERMS AND CONDITIONS

I. GENERAL TERMS

A. AUTHORITY. This permit is issued pursuant to Federal Land Policy and Management Act , as amended October 21, 1976 and 36 CFR Part 251, Subpart 8, as amended, and is subject to their provisions.

B. AUTHORIZED OFFICER. The authorized officer is the Forest or Grassland Supervisor or a subordinate officer with delegated authority.

C. TERM. This permit shall expire at midnight on 02/28/2022, 8 years and 9 months from the date of issuance.

D. RENEWAL. This permit is not renewable. Prior to expiration of this permit, the holder may apply for a new permit that would renew the use and occupancy authorized by this permit. Applications for a new permit must be submitted at least 6 months prior to expiration of this permit. Renewal of the use and occupancy authorized by this permit shall be at the sole discretion of the authorized officer. At a minimum, before renewing the use and occupancy authorized by this permit, the authorized officer shall require that (1) the use and occupancy to be authorized by the new permit is consistent with the standards and guidelines in the applicable land management plan; (2) the type of use and occupancy to be authorized by the new permit is the same as the type of use and occupancy authorized by this permit; and (3) the holder is in compliance with all the terms of this permit. The authorized officer may prescribe new terms and conditions when a new permit is issued.

E. AMENDMENT. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law , regulation, directive, the applicable forest land and resource management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215.

F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS. In exercising the rights and privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations , and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulation, or policy. The Forest Service assumes no responsibility for enforcing laws, regulations, and other legal requirements that fall under the jurisdiction of other governmental entities.

G. NON-EXCLUSIVE USE. The use or occupancy authorized by this permit is not exclusive . The Forest Service reserves the right of access to the permit area, including a continuing right of physical entry to the permit area for inspection , monitoring, or any other purpose consistent with any right or obligation of the United States under any law or regulation. The Forest Service reserves the right to allow others to use the permit area in any way that is not inconsistent with the holder's rights and privileges under this permit, after consultation with all parties involved. Except for any restrictions that the holder and the authorized officer agree are necessary to

protect the installation and operation of authorized temporary improvements , the lands and waters covered by this permit shall remain open to the public for all lawful purposes.

H. ASSIGNABILITY. This permit is not assignable or transferable.

I. TRANSFER OF TITLE TO THE IMPROVEMENTS.

1. **Notification of Transfer.** The holder shall notify the authorized officer when a transfer of title to all or part of the authorized improvements is contemplated .

2. **Transfer of Title.** Any transfer of title to the improvements covered by this permit shall result in termination of the permit. The party who acquires title to the improvements must submit an application for a permit. The Forest Service is not obligated to issue a new permit to the party who acquires title to the improvements. The authorized officer shall determine that the applicant meets requirements under applicable federal regulations.

J. CHANGE IN CONTROL OF THE BUSINESS ENTITY.

1. **Notification of Change in Control.** The holder shall notify the authorized officer when a change in control of the business entity that holds this permit is contemplated .

a. In the case of a corporation , control is an interest, beneficial or otherwise, of sufficient outstanding voting securities or capital of the business so as to permit the exercise of managerial authority over the actions and operations of the corporation or election of a majority of the board of directors of the corporation.

b. In the case of a partnership, limited partnership, joint venture , or individual entrepreneurship , control is a beneficial ownership of or interest in the entity or its capital so as to permit the exercise of managerial authority over the actions and operations of the entity.

c. In other circumstances , control is any arrangement under which a third party has the ability to exercise management authority over the actions or operations of the business.

2. **Effect of Change in Control.** Any change in control of the business entity as defined in paragraph 1 of this clause shall result in termination of this permit. The party acquiring control must submit an application for a special use permit. The Forest Service is not obligated to issue a new permit to the party who acquires control. The authorized officer shall determine whether the applicant meets the requirements established by applicable federal regulations.

II. IMPROVEMENTS

A. LIMITATIONS ON USE. Nothing in this permit gives or implies permission to build or maintain any structure or facility or to conduct any activity , unless specifically authorized by this permit. Any use not specifically authorized by this permit must be proposed in accordance with 36 CFR 251 .54. Approval of such a proposal through issuance of a new permit or permit amendment is at the sole discretion of the authorized officer.

B. PLANS. All plans for development , layout, construction , reconstruction , or alteration of improvements in the permit area, as well as revisions to those plans must be prepared by a professional engineer, architect, landscape architect , or other qualified professional based on federal employment standards acceptable to the authorized officer . These plans and plan revisions must have written approval from the authorized officer before they are implemented. The authorized officer may require the holder to furnish as-built plans, maps, or surveys upon completion of the work .

C. CONSTRUCTION. Any construction authorized by this permit shall commence by n/a and shall be completed by n/a.

III. OPERATIONS.

A. PERIOD OF USE. Use or occupancy of the permit area shall be exercised at least 60 days each year.

B. CONDITION OF OPERATIONS. The holder shall maintain the authorized improvements and permit area to standards of repair, orderliness , neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this permit. Standards are subject to periodic change by the authorized officer when deemed necessary to meet statutory, regulatory, or policy requirements or to protect national forest resources. The holder shall comply with inspection requirements deemed appropriate by the authorized officer .

C. OPERATING PLAN. The holder shall prepare and annually revise by as needed an operating plan. The operating plan shall be prepared in consultation with the authorized officer or the authorized officer's designated representative and shall cover all operations authorized by this permit. The operating plan shall outline steps the holder will take to protect public health and safety and the environment and shall include sufficient detail and standards to enable the Forest Service to monitor the holder's operations for compliance with the terms and conditions of this permit. The operating plan shall be submitted by the holder and approved by the authorized officer or the authorized officer's designated representative prior to commencement of operations and shall be attached to this permit as an appendix. The authorized officer may require an annual meeting with the holder to discuss the terms and conditions of the permit or operating plan, annual use reports, or other concerns either party may have.

D. INSPECTION BY THE FOREST SERVICE. The Forest Service shall monitor the holder's operations and reserves the right to inspect the permit area and transmission facilities at any time for compliance with the terms of this permit. The holder's obligations under this permit are not contingent upon any duty of the Forest Service to inspect the permit area or transmission facilities. A failure by the Forest Service or other governmental officials to inspect is not a justification for noncompliance with any of the terms and conditions of this permit.

IV. RIGHTS AND LIABILITIES

A. LEGAL EFFECT OF THE PERMIT. This permit, which is revocable and terminable, is not a contract or a lease, but rather a federal license. The benefits and requirements conferred by this authorization are reviewable solely under the procedures set forth in 36 CFR Part 251, Subpart C, and 5 U.S.C. 704. This permit does not constitute a contract for purposes of the Contract Disputes Act, 41 U.S.C. 601. The permit is not real property, does not convey any interest in real property, and may not be used as collateral for a loan.

B. VALID OUTSTANDING RIGHTS. This permit is subject to all valid outstanding rights. Valid outstanding rights include those derived under mining and mineral leasing laws of the United States. The United States is not liable to the holder for the exercise of any such right.

C. ABSENCE OF THIRD-PARTY BENEFICIARY RIGHTS. The parties to this permit do not intend to confer any rights on any third party as a beneficiary under this permit.

D. SERVICES NOT PROVIDED. This permit does not provide for the furnishing of road or trail maintenance, water, fire protection, search and rescue, or any other such service by a government agency, utility, association, or individual.

E. RISK OF LOSS. The holder assumes all risk of loss associated with use or occupancy of the permit area, including but not limited to theft, vandalism, fire and any fire-fighting activities (including prescribed burns), avalanches, rising waters, winds, falling limbs or trees, and other forces of nature. If authorized temporary improvements in the permit area are destroyed or substantially damaged, the authorized officer shall conduct an analysis to determine whether the improvements can be safely occupied in the future and whether rebuilding should be allowed. If rebuilding is not allowed, the permit shall terminate.

F. DAMAGE TO UNITED STATES PROPERTY. The holder has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, damage to government-owned improvements covered by this permit, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clause IV.F and section V, "hazardous material" shall mean (a) any hazardous substance under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any petroleum product or its derivative, including fuel oil, and waste oils; and (d) any hazardous substance, extremely hazardous substance, toxic substance, hazardous waste, ignitable, reactive or corrosive materials, pollutant, contaminant, element, compound, mixture, solution or substance that may pose a present or potential hazard to human health or the environment under any applicable environmental laws.

1. The holder shall avoid damaging or contaminating the environment, including but not limited to the soil, vegetation (such as trees, shrubs, and grass), surface water, and groundwater, during the holder's use or occupancy of the permit area. If the environment or any government property covered by this permit becomes damaged during the holder's use or occupancy of the permit area, the holder shall immediately repair the damage or replace the damaged items to the satisfaction of the authorized officer and at no expense to the United States.

2. The holder shall be liable for all injury, loss, or damage, including fire suppression, prevention and control of the spread of invasive species, or other costs in connection with rehabilitation or restoration of natural resources associated with the use or occupancy authorized by this permit. Compensation shall include but not be limited to the value of resources damaged or destroyed, the costs of restoration, cleanup, or other mitigation, fire suppression or other types of abatement costs, and all administrative, legal (including attorney's fees), and other costs. Such costs may be deducted from a performance bond required under clause IV.I.

3. The holder shall be liable for damage caused by use of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees to all roads and trails of the United States to the same extent as provided under clause IV.F.1, except that liability shall not include reasonable and ordinary wear and tear

G. HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION. The holder shall promptly abate as completely as possible and in compliance with all applicable laws and regulations any activity or condition arising out of or relating to the authorized use or occupancy that causes or threatens to cause a hazard to public health or the safety of the holder's employees or agents or harm to the environment (including areas of vegetation or timber, fish or other wildlife populations, their habitats, or any other natural resources). The holder shall prevent impacts to the environment and cultural resources by implementing actions identified in the operating plan to prevent establishment and spread of invasive species. The holder shall immediately notify the authorized officer of all serious accidents that occur in connection with such activities. The responsibility to protect the health and safety of all persons affected by the use or occupancy authorized by this permit is solely that of the holder. The Forest Service has no duty under the terms of this permit to inspect the permit area or operations and activities of the holder for hazardous conditions or compliance with health and safety standards.

H. INDEMNIFICATION OF THE UNITED STATES. The holder shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the holder in connection with the use or occupancy authorized by this permit. This indemnification provision includes but is not limited to acts and omissions of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees in connection with the use or occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may in the future become applicable, and including but not limited to those environmental laws listed in clause V.A of this permit; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous waste, hazardous materials, pollutant, contaminant, oil in any form, or petroleum product into the environment. The authorized officer may prescribe terms that allow the holder to replace, repair, restore, or otherwise undertake necessary curative actions to mitigate damages in addition to or as an alternative to monetary indemnification.

I. BONDING. The authorized officer may require the holder to furnish a surety bond or other security for any of the obligations imposed by the terms and conditions of this permit or any applicable law, regulation, or order.

V. RESOURCE PROTECTION

A. COMPLIANCE WITH ENVIRONMENTAL LAWS. The holder shall in connection with the use or occupancy authorized by this permit comply with all applicable federal, state, and local environmental laws and regulations, including but not limited to those established pursuant to the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901 et seq., the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., the Oil Pollution Act, as amended, 33 U.S.C. 2701 et seq., the Clean Air Act, as amended, 42 U.S.C. 7401 et seq., CERCLA, as amended, 42 U.S.C. 9601 et seq., the Toxic Substances Control Act, as amended, 15 U.S.C. 2601 et seq., the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, 7 U.S.C. 136 et seq., and the Safe Drinking Water Act, as amended, 42 U.S.C. 3001 et seq.

B. VANDALISM. The holder shall take reasonable measures to prevent and discourage vandalism and disorderly conduct and when necessary shall contact the appropriate law enforcement officer.

C. PESTICIDE USE. Pesticides may not be used outside of buildings to control undesirable woody and herbaceous vegetation (including aquatic plants), insects, rodents, fish, and other pests and weeds without prior written approval from the authorized officer. A request for approval of planned uses of pesticides shall be submitted annually by the holder on the due date established by the authorized officer. The report shall cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review shall be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval, only when unexpected outbreaks of pests or weeds require control measures that were not anticipated at the time an annual report was submitted. Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned shall be considered for use on National Forest System lands. Label instructions and all applicable laws and regulations shall be strictly followed in the application of pesticides and disposal of excess materials and containers.

D. ARCHAEOLOGICAL-PALEONTOLOGICAL DISCOVERIES . The holder shall immediately notify the authorized officer of all antiquities or other objects of historic or scientific interest, including but not limited to historic or prehistoric ruins, fossils, or artifacts discovered in connection with the use and occupancy authorized by this permit. The holder shall leave these discoveries intact and in place until directed otherwise by the authorized officer. Protective and mitigative measures specified by the authorized officer shall be the responsibility of the holder.

E. NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION . In accordance with 25 U.S.C . 3002(d) and 43 CFR 10.4, if the holder inadvertently discovers human remains, funerary objects, sacred objects , or objects of cultural patrimony on National Forest System lands, the holder shall immediately cease work in the area of the discovery and shall make a reasonable effort to protect and secure the items. The holder shall immediately notify the authorized officer by telephone of the discovery and shall follow up with written confirmation of the discovery. The activity that resulted in the inadvertent discovery may not resume until 30 days after the authorized officer certifies receipt of the written confirmation , if resumption of the activity is otherwise lawful, or at any time if a binding written agreement has been executed between the Forest Service and the affiliated Indian tribes that adopts a recovery plan for the human remains and objects.

F. PROTECTION OF HABITAT OF THREATENED, ENDANGERED, AND SENSITIVE SPECIES. The location of sites within the permit area needing special measures for protection of plants or animals listed as threatened or endangered under the Endangered Species Act (ESA) of 1973, 16 U.S.C. 1531 et seq., as amended, or identified as sensitive or otherwise requiring special protection by the Regional Forester under Forest Service Manual (FSM) 2670, pursuant to consultation conducted under section 7 of the ESA, may be shown on the ground or on a separate map. The map shall be attached to this permit as an appendix . The holder shall take any protective and mitigative measures specified by the authorized officer. If protective and mitigative measures prove inadequate, if other sites within the permit area containing threatened, endangered, or sensitive species or species otherwise requiring special protection are discovered, or if new species are listed as threatened or endangered under the ESA or identified as sensitive or otherwise requiring special protection by the Regional Forester under the FSM, the authorized officer may specify additional protective and mitigative measures. Discovery of these sites by the holder or the Forest Service shall be promptly reported to the other party.

G. CONSENT TO STORE HAZARDOUS MATERIALS. The holder shall not store any hazardous materials at the site without prior written approval from the authorized officer . This approval shall not be unreasonably withheld. If the authorized officer provides approval, this permit shall include, or in the case of approval provided after this permit is issued, shall be amended to include specific terms addressing the storage of hazardous materials, including the specific type of materials to be stored, the volume, the type of storage, and a spill plan. Such terms shall be proposed by the holder and are subject to approval by the authorized officer.

H. CLEANUP AND REMEDIATION

1. The holder shall immediately notify all appropriate response authorities, including the National Response Center and the authorized officer or the authorized officer's designated representative , of any oil discharge or of the release of a hazardous material in the permit area in an amount greater than or equal to its reportable quantity, in accordance with 33 CFR Part 153, Subpart B, and 40 CFR Part 302. For the purposes of this requirement, "oil" is as defined by section 311(a)(1) of the Clean Water Act, 33 U.S.C. 1321(a)(1). The holder shall immediately notify the authorized officer or the authorized officer's designated representative of any release or threatened release of any hazardous material in or near the permit area which may be harmful to public health or welfare or which may adversely affect natural resources on federal lands.

2. Except with respect to any federally permitted release as that term is defined under Section 101(10) of CERCLA , 42 U.S.C. 9601 (10) , the holder shall clean up or otherwise remediate any release, threat of release, or discharge of hazardous materials that occurs either in the permit area or in connection with the holder's activities in the permit area, regardless of whether those activities are authorized under this permit. The holder shall perform cleanup or remediation immediately upon discovery of the release, threat of release, or discharge of hazardous materials. The holder shall perform the cleanup or remediation to the satisfaction of the authorized officer and at no expense to the United States. Upon revocation or termination of this permit, the holder shall deliver the site to the Forest Service free and clear of contamination.

I. CERTIFICATION UPON REVOCATION OR TERMINATION . If the holder uses or stores hazardous materials at the site, upon revocation or termination of this permit the holder shall provide the Forest Service with a report certified by a professional or professionals acceptable to the Forest Service that the permit area is uncontaminated by the presence of hazardous materials and that there has not been a release or discharge of hazardous materials upon the permit area, into surface water at or near the permit area, or into groundwater below the permit area during the term of the permit. This certification requirement may be waived by the authorized officer when the Forest Service determines that the risks posed by the hazardous material are minimal. If a release or discharge has occurred, the professional or professionals shall document and certify that the release or discharge has been fully remediated and that the permit area is in compliance with all federal , state, and local laws and regulations.

VI. LAND USE FEE AND ACCOUNTING ISSUES

A. LAND USE FEES. The use or occupancy authorized by this permit is exempt from a land use fee or the land use fee has been waived in full pursuant to 36 CFR 251.57 and Forest Service Handbook 2709.11, Chapter 30.

B. MODIFICATION OF THE LAND USE FEE. The land use fee may be revised whenever necessary to reflect the market value of the authorized use or occupancy or when the fee system used to calculate the land use fee is modified or replaced.

c. FEE PAYMENT ISSUES.

1. Crediting of Payments. Payments shall be credited on the date received by the deposit facility, except that if a payment is received on a non-workday, the payment shall not be credited until the next workday.

2. Disputed Fees. Fees are due and payable by the due date. Disputed fees must be paid in full. Adjustments will be made if dictated by an administrative appeal decision, a court decision, or settlement terms.

3. Late Payments

(a) Interest. Pursuant to 31 U.S.C. 3717 et seq., interest shall be charged on any fee amount not paid within 30 days from the date it became due. The rate of interest assessed shall be the higher of the Prompt Payment Act rate or the rate of the current value of funds to the Treasury (i.e., the Treasury tax and loan account rate), as prescribed and published annually or quarterly by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletins. Interest on the principal shall accrue from the date the fee amount is due.

(b) Administrative Costs. If the account becomes delinquent, administrative costs to cover processing and handling the delinquency shall be assessed.

(c) Penalties. A penalty of 6% per annum shall be assessed on the total amount that is more than 90 days delinquent and shall accrue from the same date on which interest charges begin to accrue.

(d) Termination for Nonpayment. This permit shall terminate without the necessity of prior notice and opportunity to comply when any permit fee payment is 90 calendar days from the due date in arrears. The holder shall remain responsible for the delinquent fees.

4. Administrative Offset and Credit Reporting. Delinquent fees and other charges associated with the permit shall be subject to all rights and remedies afforded the United States pursuant to 31 U.S.C. 3711 et seq. and common law. Delinquencies are subject to any or all of the following:

(a) Administrative offset of payments due the holder from the Forest Service.

(b) If in excess of 60 days, referral to the Department of the Treasury for appropriate collection action as provided by 31 U.S.C. 3711(g)(1).

(c) Offset by the Secretary of the Treasury of any amount due the holder, as provided by 31 U.S.C. 3720 et seq.

(d) Disclosure to consumer or commercial credit reporting agencies.

VII. REVOCATION, SUSPENSION, AND TERMINATION

A. REVOCATION AND SUSPENSION. The authorized officer may revoke or suspend this permit in whole or in part:

1. For noncompliance with federal, state, or local law.

2. For noncompliance with the terms of this permit.

3. For abandonment or other failure of the holder to exercise the privileges granted.

4. With the consent of the holder.

5. For specific and compelling reasons in the public interest.

Prior to revocation or suspension, other than immediate suspension under clause VI.8, the authorized officer shall give the holder written notice of the grounds for revocation or suspension. In the case of revocation or suspension based on clause VII.A.1, 2, or 3, the authorized officer shall give the holder a reasonable time, typically not to exceed 90 days, to cure any noncompliance.

B. IMMEDIATE SUSPENSION. The authorized officer may immediately suspend this permit in whole or in part when necessary to protect public health or safety or the environment. The suspension decision shall be in writing. The holder may request an on-site review with the authorized officer's supervisor of the adverse conditions prompting the suspension. The authorized officer's supervisor shall grant this request within 48 hours. Following the on-site review, the authorized officer's supervisor shall promptly affirm, modify, or cancel the suspension.

C. APPEALS AND REMEDIES. Written decisions by the authorized officer relating to administration of this permit are subject to administrative appeal pursuant to 36 CFR Part 251, Subpart C, as amended. Revocation or suspension of this permit shall not give rise to any claim for damages by the holder against the Forest Service.

D. TERMINATION. This permit shall terminate when by its terms a fixed or agreed upon condition, event, or time occurs without any action by the authorized officer. Examples include but are not limited to expiration of the permit by its terms on a specified date and termination upon change of control of the business entity. Termination of this permit shall not require notice, a decision document, or any environmental analysis or other documentation. Termination of this permit is not subject to administrative appeal and shall not give rise to any claim for damages by the holder against the Forest Service.

E. RIGHTS AND RESPONSIBILITIES UPON REVOCATION OR TERMINATION WITHOUT RENEWAL. Upon revocation or termination of this permit without renewal of the authorized use, the holder shall remove all structures and improvements, except those owned by the United States, within a reasonable period prescribed by the authorized officer and shall restore the site to the satisfaction of the authorized officer. If the holder fails to remove all structures and improvements within the prescribed period, they shall become the property of the United States and may be sold, destroyed, or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all costs associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VIII. MISCELLANEOUS PROVISIONS

A. MEMBERS OF CONGRESS. No member of or delegate to Congress or resident commissioner shall benefit from this permit either directly or indirectly, except to the extent the authorized use provides a general benefit to a corporation.

B. CURRENT ADDRESSES. The holder and the Forest Service shall keep each other informed of current mailing addresses, including those necessary for billing and payment of land use fees.

C. SUPERSEDED PERMIT. This permit supersedes a special use permit designated BIG CREEK LODGE AND OUTFITTERS, INC., KRL104, dated 08/31/2004.

D. SUPERIOR CLAUSES. If there is a conflict between any of the preceding printed clauses and any of the following clauses, the preceding printed clauses shall control.

E. Surveys, Land Corners (04). The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

F. Water Facilities and Water Rights (D-24).

1. **Water Facilities.** No ditch, reservoir, well, spring, seepage, or other facility to pump, divert, store, or convey water (hereinafter "water facilities") for which the point of diversion, storage, or withdrawal is on National Forest System lands may be initiated, developed, certified, or adjudicated by the holder unless expressly authorized in this permit. The authorization of any water facilities in the permit area is granted to allow use of water only in connection with the [recreation residence, resort, marina, or other use] authorized by this permit. If the use of any water facilities in connection with this [recreation residence, resort, marina, or other use] ceases, the authorization to use any associated water

facilities also ceases. The United States may place conditions on installation, operation, maintenance, and removal of water facilities that are necessary to protect public property, public safety, and natural resources on National Forest System lands in compliance with applicable law. Any change in a water facility, including a change in the ownership or beneficial use of water or location of use of water from a water facility, that is not expressly authorized in this permit shall result in termination of the authorization for that water facility.

2. Water Rights. This permit does not confer any water rights on the holder. The term "water rights" includes all authorizations, such as certificates, reservations, decrees, or permits, for water use issued under state, local, or other law and all water rights otherwise recognized under state law. Any necessary water rights must be acquired and maintained by the holder in accordance with State law and the terms of this permit. After this permit is issued, all water rights obtained by the holder for facilities that divert or pump water from sources located on National Forest System lands for use on National Forest System lands, whether authorized or unauthorized, are for the benefit of the United States and shall be acquired in the name of the United States. Any expenses for acquiring water rights shall be the responsibility of the holder and not the responsibility of the United States.

G. HYDRO ONLY Esthetics (K6). The holder shall conserve the scenic and esthetic values of the area under this permit during construction, operation, and maintenance of the project improvements.

H. HYDRO ONLY Signs (K11). The holder shall erect no signs or advertising devices on the area covered by this permit without prior approval of the Forest Service as to location, design, size, color, and message. The holder shall maintain or renew erected signs as necessary to neat and presentable standards.

I. HYDRO ONLY Project Safety (K13). The holder shall carry out all operations in a skillful manner, having due regard for the safety of employees and the public, and shall safeguard unsafe areas. The holder shall regularly inspect its facilities and provide further effective safety measures as needed for safety protection.

J. HYDRO ONLY Pollution (K19). The holder shall discharge no waste or byproduct if it contains any substances in concentrations that would result in violation of water quality standards set forth by the State; would impair present or future beneficial uses of water; would cause pollution, nuisance, or contamination; or would unreasonably degrade the quality of any waters. During the construction and operation of the project, the holder shall protect project water quality by using the existing best management practices mutually agreed to by the Forest Service and the State.

K. HYDRO ONLY Improvement Relocation (K29). The Forest Service grants this permit with the express understanding that should future location of government improvements or road rights-of-way require the relocation or adjustment of the holder's linear-type improvements (such as transmission lines, penstocks, pipelines, ditches, or roads), the holder shall relocate at the holder's expense within 180 days following written request to relocate.

L. HYDRO ONLY Fees, Licensed Projects (K31). The holder shall pay annually, in advance, a sum determined by the Forest Service to be the fair market value of the use rights granted by this permit. As long as the holder makes payments, in accordance with Section 10(e) of the Federal Power Act, to the Federal Energy Regulatory Commission (FERG) for the use of this land in an amount determined to be the approximate fair market rental of the lands, the fee for this permit is waived in its entirety. In the event the Forest Service determines that payments to FERG are significantly less than fair market rental or if the holder discontinues such payments, the Forest Service reserves the right to establish an appropriate fee and appropriate conditions of payment. Any fees paid by the holder to FERG shall be credited toward the fee due from the holder for this permit.

M. HYDRO ONLY Permit Term, Licensed Project (K32). Unless sooner canceled or terminated by the authorized officer, in accordance with the provisions of the permit, the term of this permit shall be concurrent with the Federal Energy Regulatory Commission (FERG) license No. P-10721 and become void on February 28, 2022; but the Forest Service may grant a new permit to occupy and use the same National Forest System land, provided that FERG grants a new license under the Federal Power Act. The new permit must comply with the laws and regulations governing the occupancy and use of National Forest System lands at that time.

N. HYDRO ONLY Hazard Analysis (K33). Avalanches, rising waters, high winds, falling limbs or trees, and other hazards are natural phenomena in the forest that present risks to the holder's property that the holder hereby assumes. The holder is responsible for inspecting its site, right-of-way, and the immediate adjoining area for dangerous conditions, hanging limbs, and other evidence of hazardous conditions and, after securing permission from the Forest Service, is responsible for removing such hazards.

This permit is accepted subject to the conditions set out above.

Date May 21, 2013

J Curtis Earl Idaho Aviation Foundation, Inc.

By: James E. Davies
James Davies, President

(CORPORATE SEAL)

1

ATTEST :

The following certificate shall be executed by the Secretary or Assistant Secretary of the Corporation:

I, Nadine Burak, certify that I am the Secretary of the Corporation that executed the above permit; that James Davies who signed said permit on behalf of said Corporation was then President of said Corporation; that I know his signature on said permit is genuine; and that said permit was duly signed, sealed, and attested to for and on behalf of said Corporation by authority of its governing body

Nadine Burak
(Assistant) Secretary

U. S. DEPARTMENT OF AGRICULTURE Forest
Service, Payette National Forest

By: J: ---.C.---:---:---
(Authorized Officer Signature)

Keith B. Lannom, Forest Supervisor
(Name and Title)

06/07/13
(Date)

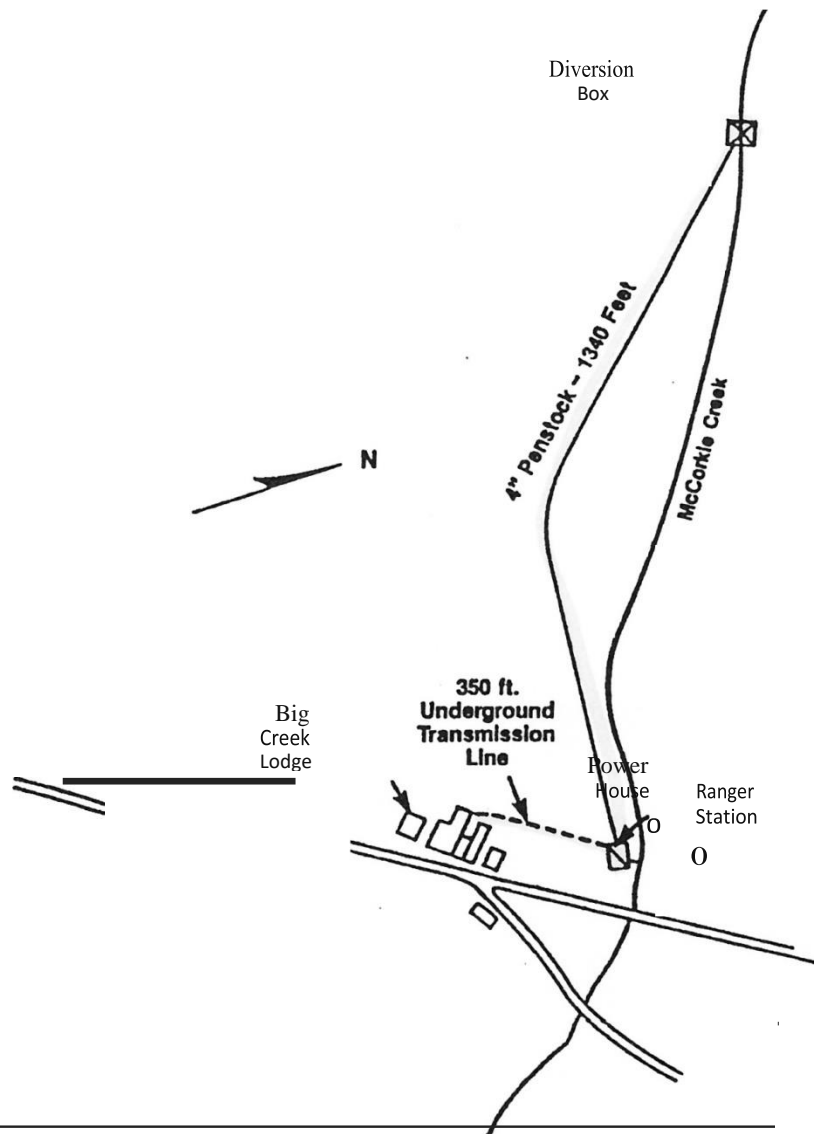


Figure 2. Location of the project features of the Big Creek Project, FERC No. 10721, Idaho (Source: Big Creek Lodge and outfitters, Inc., 1991, amended application, as modified by the staff).

Big Creek Hydropower Operation and Maintenance Plan

1. Diversion will be screened with a mesh size of 3/32" to avoid entrainment of fish and eggs.
2. Any ground disturbance due to maintenance of diversion equipment will be mitigated with a high level of erosion control to prevent erosion and subsequent sediment deposition into streams. All maintenance is assumed to be hand maintenance .
3. Any leakage due to malfunctioning diversion equipment will be repaired as soon as possible to prevent stream bank washout or erosion and avoid sediment deposition in streams.
4. Provisions of the water right (ie, maximum diversion rate, period of use, place of use, etc.) associated with the water system shall be adhered to.
5. The permittee will ensure a continuous minimum flow of at least equal to 50 percent of the instantaneous flow in the stream, remains in McCorkle Creek. (FERC License condition).
6. The use authorized by this permit and by the Tenn Permit issued for operation of Big Creek Lodge on May 3, 2013, are interdependent and neither will be allowed to be operated or transferred to a separate entity.

BIG CREEK HYDROELECTRIC PROJECT

FERC No. P-10721

BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
UNITED STATES OF AMERICA
Preliminary License Application
For Minor Water Power Project – 1.5 MW or Less
Using the Traditional Licensing Process (TLP)

DOCUMENTATION OF PRE-FILING CONSULTATIONS

Prepared By:
Idaho Aviation Foundation
PO Box 2016
Eagle, ID 83616
208-859-5537
info@idahoaviationfoundation.org

November 18, 2019

Stage 1 Consultation Requirements

IAF has complied with the Stage 1 consultation requirements of 18 C.F.R. Section 4.38(b)

(1) Please see attached letters sent to the consulted entities. The letters provide a description of the proposed project and supporting information.

(a) Amended PAD Letter to Interested Parties



J. Curtis Earl
IDAHO AVIATION FOUNDATION
Box 2016
Eagle, Idaho 83616



March 17, 2017

To: Interested Parties

Subject: Big Creek Hydroelectric Project (FERC No. 10721) Amended Preliminary Application Document (PAD)

Dear Sir or Madam,

Please be advised that The Idaho Aviation Foundation (IAF) has submitted an amended Preliminary Application Document (PAD) for the Big Creek Hydroelectric Project (FERC No. 10721).

This submittal has been electronically filed with the Commission and is available on their eLibrary, and on our website at <http://www.idahoaviationfoundation.org/projects.php#p12>.

The amendments to the PAD include:

1. An updated Plan Schedule
2. Updated Tables and Figures in the Table of Contents
3. Addition of three Appendices, beginning on page 53

If you have questions regarding this filing, please contact Vic Jaro at 208-404-9627 or Nadine Burak at 208-861-9056.

Sincerely,

A handwritten signature in cursive script that reads "Nadine Burak".

Nadine Burak, Secretary
Idaho Aviation Foundation

(b) 2017.05.23 Interested Party Notice of Joint Meeting



J. Curtis Earl
IDAHO AVIATION FOUNDATION
Box 2016
Eagle, Idaho 83616



NOTICE OF JOINT AGENCY/PUBLIC MEETING

BIG CREEK HYDROELECTRIC PROJECT

FERC PROJECT NO. 10721-031

The Idaho Aviation Foundation (IAF) has scheduled the Joint Agency/Public Meeting for the re-license of the Big Creek Hydroelectric Project that supplies clean, renewable, hydro power to Big Creek Lodge located 24 miles Northeast of Yellow Pine, Idaho in Valley County.

The date, time, and location of the Joint Meeting is as follows:

Date: June 7, 2017
Time: 2:00 PM MDT
Location: Idaho Department of Transportation
Division of Aeronautics
3483 Rickenbacker ST.
Boise, ID 83705
2nd Floor Conference Room

The meeting agenda is enclosed below.

If you have questions regarding this meeting, please contact Vic Jaro at 208-404-9627 or Nadine Burak at 208-861-9056.

MEETING AGENDA

1. Welcome and Call to Order
2. Introductions
3. Review, Revise (if necessary), Approve Agenda
4. Project Location
5. Project Overview
 - (a) History
 - (b) Idaho Aviation Foundation (IAF) – Project Involvement
 1. What is the IAF
 2. Project Involvement
 - (c) Pre-2016 System Description and Operation
 - (d) 2016 System Description and Proposed Operation
6. Hydropower Alternatives
7. Project Impacts
8. Possible Studies – Discussion
9. Site Visit – Discussion
10. Adjourn

(c) **2017.07.17 Notice of Site Meeting**

NOTICE OF SITE VISIT
BIG CREEK HYDROELECTRIC PROJECT
FERC PROJECT NO. 10721-031

The Idaho Aviation Foundation (IAF) has scheduled the Site Visit for the re-license of the Big Creek Hydroelectric Project that supplies clean, renewable, hydro power to Big Creek Lodge (reconstruction currently in progress) located 24 miles Northeast of Yellow Pine, Idaho in Valley County.

The date, time, and location of the Site Visit is as follows:

Date: August 4, 2017

Time: 1:00 PM MDT

Location: The Big Creek Hydroelectric Project, FERC Project 10721 (Project) is located in a remote mountainous region of central Idaho, 24 miles northeast of Yellow Pine in Valley County.

Interested parties are encouraged to visit the IAF website at www.idahoaviationfoundation.org/projects.php to view all submittal documents, and detailed directions from Cascade and McCall, Idaho to the Project site.

- (2) On 06/07/17 IAF held a joint meeting with the pertinent agencies.
- (3) IAF informed and invited members of the public to attend the joint meeting and the site visit.

(a) 2017.05.23 Proof of Publication of Joint Meeting

Idaho Statesman

The Newspaper of the Treasure Valley
IDAHOSTATESMAN.COM

PO Box 40, Boise, ID 83707-0040

LEGAL PROOF OF PUBLICATION

Account #	Ad Number	Identification	PO	Amount	Cols	Lines
573148	0003086276	LEGAL NOTICE	On February 28, 2017, the Idaho	Big Creek Hydro/ferc	\$66.80	2 30

Attention: NADINE BURAK

IDAHO AVIATION FOUNDATION
PO BOX 2016
EAGLE, ID 83616

LEGAL NOTICE

On February 28, 2017, the Idaho Aviation Foundation (IAF) filed a Notice of Intent (NOI) and a Pre-Application Document (PAD) with the Federal Energy Regulatory Commission (FERC). The filing is required to initiate the relicensing process for the **Big Creek Hydroelectric Project (FERC No. 10721-031)** to allow continued Project operation when the current license, which was issued on March 26, 1992, expires on February 28, 2022.

A Joint Agency/Public Meeting has been scheduled to present in a public forum the history of the project, project description and operation, hydropower alternatives, project impacts, and discuss possible studies. The date, time, and location of the Joint Meeting is as follows:

Date: June 7, 2017

Time: 2:00 PM MDT

Location: Idaho Department of Transportation

Department of Aeronautics

3483 Rickenbacker ST.

Boise, ID 83705

2nd Floor Conference Room

Interested parties are encouraged to visit the IAF website at www.idahoaviationfoundation.org/projects.php to view all submittal documents, meeting notice, and meeting agenda.

Pub. May 23, 2017

0003086276-01

JANICE HILDRETH, being duly sworn, deposes and says: That she is the Principal Clerk of The Idaho Statesman, a daily newspaper printed and published at Boise, Ada County, State of Idaho, and having a general circulation therein, and which said newspaper has been continuously and uninterruptedly published in said County during a period of twelve consecutive months prior to the first publication of the notice, a copy of which is attached hereto: that said notice was published in The Idaho Statesman, in conformity with Section 60-108, Idaho Code, as amended, for:

1 Insertions

Beginning issue of: 05/23/2017

Ending issue of: 05/23/2017

Janice Hildreth
(Legals Clerk)

STATE OF IDAHO)

.SS

COUNTY OF ADA)

On this 24th day of May in the year of 2017 before me, a Notary Public, personally appeared before me Janice Hildreth known or identified to me to be the person whose name subscribed to the within instrument, and being by first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Anna Gomm

Notary Public FOR Idaho

Residing at: Boise, Idaho

My Commission expires: 08/17/2022



(b) 2017.07.28 Proof of publication site visit.

Publisher's Affidavit of Publication

STATE OF IDAHO }
County of Valley } .ss

I, Tricia Warren, being duly sworn and say, I am the receptionist of The Star-News, a weekly newspaper published at McCall, in the County of Valley, State of Idaho; that said newspaper is in general circulation in the county of afore said and is a legal newspaper; that the PUBLIC NOTICE, a copy of which is enclosed hereto and is a part hereof, was published in said newspaper once a week for a period of one week in the regular and entire issue of every number there of during the period of time of publication, and was published in the newspaper proper and not in a supplement; and that publication of such notice began July 20, 2017 and ended July 20, 2017.

Tricia Warren

Subscribed and sworn before me this the 20th day of July, 2017.
STATE OF IDAHO

COUNTY OF VALLEY }
}

On this 20th day of July in the year of 2017, before me, a Notary Public, personally appeared Tricia Warren, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.



Tom Grote

Tom Grote
Notary Public for Idaho
Residing at McCall, Idaho
Commission Expires 2/8/18

SITE VISIT NOTICE

On February 28, 2017, the Idaho Aviation Foundation (IAF) filed a Notice of Intent (NOI) and a Pre-Application Document (PAD) with the Federal Energy Regulatory Commission (FERC). The filing is required to initiate the re-license process for the Big Creek Hydroelectric Project (FERC No. 10721-031) to allow continued Project operation when the current license, which was issued on March 26, 1992, expires on February 28, 2022. As a follow-up to the Joint Agency/Public Meeting held in Boise on June 7, 2017, a site visit has been scheduled to allow Agencies and the public to view the actual Project. The date, time, and location of the site visit is as follows:

Date: August 4, 2017
Time: 1:00 PM MDT

Location: The Big Creek Hydroelectric Project, FERC Project 10721 (Project) is located in a remote mountainous region of central Idaho, 24 miles northeast of Yellow Pine in Valley County.

Interested parties are encouraged to visit the IAF website at www.idahoaviationfoundation.org/projects.php to view all submittal documents and detailed directions from Cascade and McCall, Idaho to the Project site.

(4) IAF provided 60 days for the agencies to comment of the study requests.

Description of how the applicant's proposal addresses the significant resource issues raised at the joint meeting: There were no significant resource issues raised at the joint meeting but a staff gage was installed in McCorkle Creek per an agreement to study water flow levels with the Forest Service. (See Attachment 5 and Environmental Assessment (2) "Commitments").

Copies of letters received from resource agencies and Indian tribes containing study requests are attached: No study requests were received.

Stage 2 Consultation Requirements – Not Applicable

Stage 3 Consultation Requirements – Not Applicable.

Agencies provided copies of the application as filed with the Commission:

Kootenai Tribe
Northern Idaho Agency
David Shaw, Acting Superintendent
Bureau of Indian Affairs
PO Drawer 277
Lapwai, ID 83540

Nez Perce Tribe
Northern Idaho Agency
David Shaw, Acting Superintendent
Bureau of Indian Affairs
PO Drawer 277
Lapwai, ID 83540

Nez Perce Tribe
Nez Perce Agency
Mary Jane Miles, Chairman
PO Box 305
Lapwai, ID 83540-0305

Kootenai Tribe of Idaho
Northern Idaho Agency
Gary Aitken Jr., Chairman
PO Box 1269

US Forest Service
Intermountain Region (R4)
324 25th Street
Ogden, UT 84401

US Fish and Wildlife Service
Pacific Region Director
911 NE 11th Avenue
Portland, OR 97232

US Fish and Wildlife Service
US Department of the Interior
Attn: Director
1849 C Street NW, Room 3238
Washington, DC 20240-0001

National Marine Fisheries Service
Idaho State Habitat Office
David Mabe, State Director
800 E. Park Blvd., Suite 220
Boise, ID 83712-7768

National Park Service
US Department of the Interior
Attn: Headquarters Director
1849 C Street NW
Washington, DC 20240

US Environmental Protection Agency
Attn: Region 10 Administrator
1200 Sixth Avenue
Seattle, WA 98101

United States Geological Survey
Attn: Western Regional Director
345 Middlefield Road
Menlo Park, CA 94025

USDA Forest Service
1400 Independence Avenue SW
Washington, DC 20250-1111

Hydropower Reform Coalition
Attn: Rupak Thapaliya
rupak@hydroreform.org

Idaho Department of Environmental Quality
Water Quality Division
Barry Burnell, Administrator
1410 North Hilton
Boise, ID 83706

Payette National Forest
Forest Supervisors Office
500 N. Mission, Bldg. 2
McCall, ID 83638

Idaho Department of Fish and Game
Virgil Moore, Director
PO Box 25
Boise, ID 83707-0025

Idaho Department of Environmental Quality
Surface Water Manager
Don Essig, Program Manager
1410 North Hilton
Boise, ID 83706

Idaho Department of Water Resources
PO Box 83720
Boise, ID 83720-0098

Idaho Parks and Recreation
David Langhorst, Director
5657 Warm Springs Avenue
Boise, ID 83716-8700

Golden Eagle Audubon Society
PO Box 8261
Boise, ID 83707

Valley County Commissioners
PO Box 1350
Cascade, ID 83611

Idaho State Historical Society
Janet Gallimore, Executive Director
2205 Old Penitentiary Road
Boise, ID 83712

Matt Cutlip
Federal Energy Regulatory Commission
805 SW Broadway, Suite 550
Portland, OR 97205

Ms. Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Rebecca Havens
Lands Special Uses Program Manager
102 W. Lake Street
McCall ID 83638
rahavens@fs.fed.us
208-634-0416

Jim Nutt-Fisheries Biologist
Inter-Regional Ditch Bill Team
Forest Service, Region 4
Intermountain Region
161 East Mallard Drive
Suite 110
Boise, ID 83706
Phone: 208 – 342 – 9061
Fax: 208 – 342 – 7741
Email: jnutt@fs.fed.us

Ranger Anthony Botello
Krassel District Ranger
500 N. Mission, Bldg. 1
McCall, ID 83638
abbotello@fs.fed.us
208-634-0600

ATTACHMENTS
ATTACHMENT 1

Flow Statistics Ungaged Site Report

Date: Thurs Apr 13, 2017 7:08:26 AM GMT-6

Study Area: Idaho

NAD 1983 Latitude: 45.1283 (45 07 42)

NAD 1983 Longitude: -115.3239 (-115 19 26)

Drainage Area: 0.49 mi²

2001 NLCD Impervious: 0.0114 percent

Peak-Flow Basin Characteristics			
100% Peak Flow Region 5 (0.49 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.49 (below min value 3.6)	3.6	12228
Mean Annual Precipitation (inches)	25.6	19.8	49.73
N Facing Slopes gt 30pct from 30m DEM (percent)	4	2.5	32.9

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Low-Flow Basin Characteristics			
100% Low Flow Region 5 (0.49 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.49 (below min value 19.3)	19.3	12228
Mean Basin Slope from 30m DEM (percent)	46	20.2	46.7
Slopes at 30 pct from 30m DEM (percent)	84.2 (above max value 77.8)	24.7	77.8
Percent Forest (percent)	98 (above max value 88.7)	22.4	88.7
Mean Basin Elevation (feet)	7230	6171.1	8204
Percent Volcanic (percent)	48.4	27.1	100

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Zero-Flow Probability Basin Characteristics	
100% Undefined Region (0.49 mi ²)	

The selected watershed is entirely in an area for which flow equations were not defined.

Monthly and Annual Basin Characteristics			
100% Low Flow Region 5 (0.49 mi²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.49 (below min value 19.3)	19.3	12228
Mean Basin Slope from 30m DEM (percent)	46	20.2	46.7
Slopes gt 30pct from 30m DEM (percent)	84.2 (above max value 77.8)	24.7	77.8
Percent Forest (percent)	98 (above max value 88.7)	22.4	88.7
Mean Basin Elevation (feet)	7230	6171.1	8204
Percent Volcanic (percent)	48.4	27.1	100

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak-Flow Statistics						
Statistic	Value	Unit	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
PK1 5	4.92	ft ³ /s				
PK2	6.29	ft ³ /s				
PK2 33	6.71	ft ³ /s				
PK5	9.53	ft ³ /s				
PK10	11.9	ft ³ /s				
PK25	14.9	ft ³ /s				
PK50	17.1	ft ³ /s				
PK100	19.8	ft ³ /s				
PK200	22.1	ft ³ /s				
PK500	25.1	ft ³ /s				

<http://id.water.usgs.gov/PDF/wri024170/index.html> (<http://id.water.usgs.gov/PDF/wri024170/index.html>)
 Berenbrock_ Charles_ 2002_ Estimating the Magnitude of Peak Flows at Selected Recurrence Intervals for Streams in Idaho: U.S. Geological Survey Water-Resources Investigations Report 02-4170_ 59 p.

Low-Flow Statistics						
Statistic	Value	Unit	Estimation Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
M1D10Y	0.052	ft ³ /s				
M7D10Y	0.0689	ft ³ /s				
M7D2Y	0.0779	ft ³ /s				
M30D5Y	0.0835	ft ³ /s				

<http://idaho.usgs.gov/PDF/wri014093/index.html> (<http://idaho.usgs.gov/PDF/wri014093/index.html>)
 Hortness_ J.E._ and Berenbrock_ Charles_ 2001_ Estimating Monthly and Annual Streamflow Statistics at Ungaged Sites in Idaho: U.S. Geological Survey Water-Resources Investigations Report 01-4093_ 36 p.

Monthly and Annual Statistics						
Statistic	Value	Unit	Estimation Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
JAND20	0.48	ft3/s				
JAND50	0.39	ft3/s				
JAND80	0.38	ft3/s				
FEBD20	0.43	ft3/s				
FEBD50	0.37	ft3/s				
FEBD80	0.39	ft3/s				
MARD20	0.56	ft3/s				
MARD50	0.38	ft3/s				
MARD80	0.42	ft3/s				
APRD20	1.98	ft3/s				
APRD50	0.9	ft3/s				
APRD80	0.43	ft3/s				
MAYD20	7.81	ft3/s				
MAYD50	5.01	ft3/s				
MAYD80	2.94	ft3/s				
JUND20	10.6	ft3/s				
JUND50	6.84	ft3/s				
JUND80	4.34	ft3/s				
JULD20	2.9	ft3/s				
JULD50	1.61	ft3/s				
JULD80	1.17	ft3/s				
AUGD20	1.01	ft3/s				
AUGD50	0.72	ft3/s				
AUGD80	0.57	ft3/s				
SEPD20	0.67	ft3/s				
SEPD50	0.53	ft3/s				
SEPD80	0.44	ft3/s				
OCTD20	0.62	ft3/s				
OCTD50	0.47	ft3/s				
OCTD80	0.43	ft3/s				
NOVD20	0.64	ft3/s				
NOVD50	0.46	ft3/s				
NOVD80	0.43	ft3/s				
DECD20	0.59	ft3/s				
DECD50	0.44	ft3/s				
DECD80	0.41	ft3/s				

<http://idaho.usgs.gov/PDF/wri014093/index.html> (<http://idaho.usgs.gov/PDF/wri014093/index.html>)

Hortness, J.E., and Berenbrock, Charles, 2001, Estimating Monthly and Annual Streamflow Statistics at Ungaged Sites in Idaho: U.S. Geological Survey Water-Resources Investigations Report 01-4093, 36 p.

Accessibility **FOIA** **Privacy** **Policies and Notices**

U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/v3_beta/FTreport.htm

Page Contact Information: StreamStats Help
Page Last Modified: 08/09/2016 12:34:10 (Web2)

[Streamstats Status](#)

[News](#)



ATTACHMENT 2

Big Creek Hydropower FERC Re-License USFS Specialist PAD Feedback
May 2017

Date: 1/28/2016

Subject: McCorkle Creek ESA Listed Species Presence/Absence, Flow Data
To: Payette NF Program Fisheries Files

NAME: Alma Hanson

AREA OF SPECIALTY Botany TES Plants

PAD - CLARIFICATION / INFORMATION CORRECTION

Page 23 - Section 2.8 - paragraph 1 - line 1:

"Located in cedar-hemlock-Douglas fir section of highland Columbia forest province ... "

Correction: *Located in ,mixed conifer of Douglas-fir, Sub-alpine fir and Lodgepole pine*

Page 46-Table 2- bottom:

Barton's blackbeny column 4 Yes; colunin 5 Yes; column 6 No

Correction: *Barton's blackbeny column 4 No; colwnn 5 No, column 6 No
(Barton beny is endemic to Hell's Canyon)*

A STUDY REQUEST IS NOT NEEDED: Numerous surveys in the past found no rare plants or communities near the Lodge or its waterline. See attached.

Botanical Field Survey

Form Payette National

Forest

PROJECT NAME: Big Creek Lodge and Big Creek Water System Renewals

REPORTER: Alma Hanson

JOB TITLE & FUNCTION: Forest Botanist with Larry Kingsbury

DATES OF FIELD WORK: 09/2012 by Alma Hanson with

Kingsbury

Walked area a rounded proposed new lodge and some of the waterline area up McCrockle Creek --
but no TES habitat observed and skirted the drainage that is steep.

TYPE OF SURVEY:

Intuitiv

e POPULATION RECORDS: NA

VEG COMMUNITY TYPES & ASSOCIATED VEGETATION

PICO, SYAL, RUPA, RILA, VASC, ABLA, MARE11, SASC, SPBE2, LUPINUS SSP., ARUV, SHCA, ARCO, ALSI3, EQAR.

Dominated by PICO/VASC in uplands and ALSI along the riparian areas within the project area.

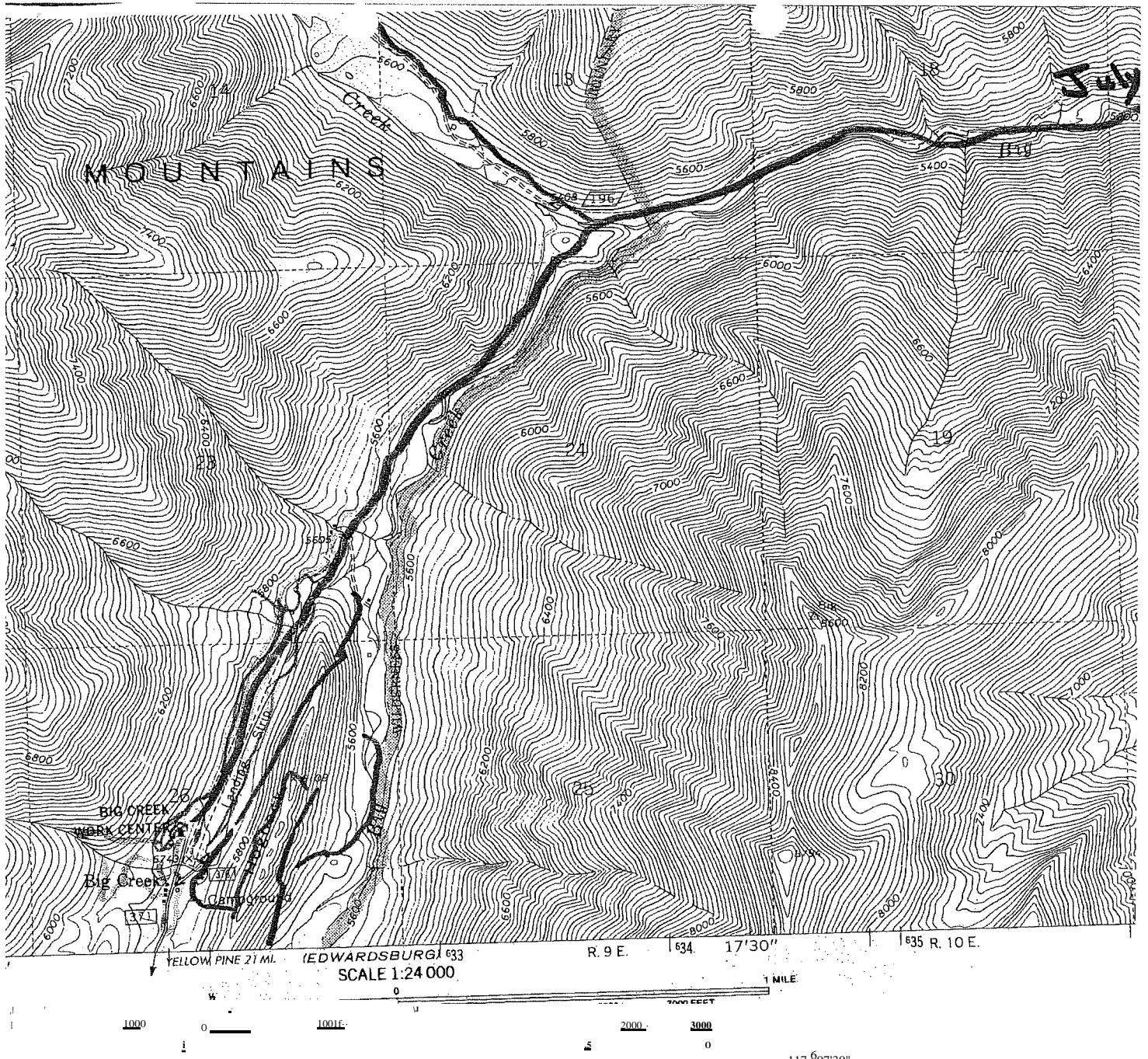
(Abbreviations from USDA Soil Conservation Service. 1999. Plants - Plants of the U.S. Alphabetical Listing, 954 pg.)

TES PLANTS OR HABITAT FOUND: NONE

STATE SENSITIVE PLANTS FOUND: NONE

Other found by Graham Johnson in area.

<i>Achillea millefolium</i>	<i>Achnatherom occidenta/e</i>	<i>Saixspp.</i>
<i>Antennaria /uzu/oides</i>	<i>Carex geyeri</i>	<i>Spiraea douglasii</i>
<i>Fragar!s spp.</i>	<i>Carexspp.</i>	<i>Popu/us tremu/oides</i>
<i>Hieracium cynog/ossoides</i>	<i>Calamagrostis rubescens</i>	<i>Pinus contorta</i>
<i>Potentilla g/andulosa</i>	<i>Equisetum spp.</i>	<i>Lonicera invo/ucrata</i>
<i>Penstemon procerus</i>	<i>Ca/amagrostis canadensis</i>	<i>Vaccinium scoparium</i>
<i>Rumex acetosella</i>		<i>Vaccinium scoparium</i>
<i>Hieracium albfflorum</i>		<i>Symphoricarpos a/bus</i>
<i>Epf!obfum angustifo/ium</i>		<i>Artostaphylos uva-ursi</i>
<i>Antennaria rosea</i>		<i>Berberis repens</i>
<i>Sedum lanceo!atum</i>		<i>Shepherdia canadensis</i>
<i>Thaa/ictrum occidentale</i>		<i>Ame/anchier alnifolia</i>
<i>Streptopus amplexifolius</i>		<i>Ables /asiocarpa</i>
<i>Chiamaphila spp.</i>		<i>Comus serica</i>
<i>Trifolium spp.</i>		<i>Ribes lacustre</i>
<i>Cirsium scariosum</i>		<i>Rubus patviflorum</i>
<i>Herac/eum maximum</i>		
<i>Amica cordifolia</i>		
<i>Angelica sp.</i>		
<i>Mertens/a sp.</i>		
<i>Moss</i>		
<i>Brachythecium frigidum</i>	(dominant species in creek)	



National Forest Boundary

Alienated Land Within the National Forest

None! Forest Boundary, as of 1987

TOWNSHIP AND SECTION LINE CLASSIFICATION

Surveyed, Location Reliable

Surveyed, Location Approximate

Insurveyed, Protraction

Primary Highway

Secondary Highway

Improved Road, Paved

Improved Road, Gravel

Improved Road, Dirt

Unimproved Road; Dirt Trail

Locked Gate

CONTOUR INTERVAL

Q9 Interstate Highway

Q10 US Highway

Q11 State Highway

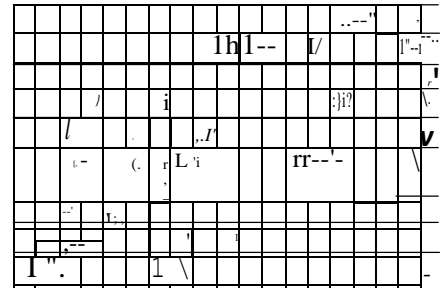
Q12 County Road

Primary Forest Road

Forest Trail

117°07'30"

45°37'30"



PAYETTE NATIONAL FOREST

ATTACHMENT 3

Mccorkle Creek is a small tributary of upper Big Creek that flows into Big Creek in between the town of Edwardsburg,, Idaho and Big Creek Guard Station. It was long assumed by Payette National Forest (PNF) fisheries personnel that Mccorkle Creek was non-fish bearing upstream of the road crossing, and fish presence in the Forest Service pasture area was uncertain. However, there were anecdotal stories of fish in the airstrip irrigation pond. In 2014 an eDNA sample taken from Mccorkle Creek returned a positive detection of a rainbow trout (*Onchorynchus mykiss*). To verify the eDNA sample, action was taken by PNF fisheries personnel to confirm presence of ESA listed fish species in Mccorkle Creek.

In the summer of 2015, PNF fisheries personnel obtained 3 additional eDNA samples from Mccorkle Creek: one from below the culvert at the Big Creek Road crossing, one from above the culvert and one from above the diversions higher in the system. Fish species tested for included rainbow trout, westslope cutthroat trout (*O. clarki lewis,*), brook trout (*Salvelinus fontinalis*), and bull trout (*S. confluentus*), at all three sites. PNF fisheries personnel electrofished extensively throughout where the eDNA samples had been taken, including the 2014 sample that tested positive. The same areas that were electrofished were also snorkeled earlier in the year (C. Zurstadt, East Zone Fisheries Biologist, personal communication).

The most downstream eDNA sample near the airstrip irrigation pond detected only brook trout. No eDNA was detected in the two samples upstream of the road crossing. During the electrofishing survey, one brook trout was captured near the irrigation pond. No ESA listed fish species were captured via electrofishing (data on file Krassel RD). The snorkel survey also returned negative results with no fish observed. One additional brook trout was observed downstream of the airstrip by a PNF fisheries biologist walking along the channel (C. Zurstadt, East Zone Fisheries Biologist, personal communication).

Due to the lack of presence detected with the extensive efforts of 2015, it was suggested that the 2014 sample be reevaluated to ensure the 2014 positive result. Upon this second analysis of the 2014 sample, no fish were detected. It was determined that the 2014 results were a false-positive and that no rainbow trout had truly been detected in Mccorkle Creek .

In addition to the fish sampling efforts of 2015, PNF fisheries personnel also obtained flow data for Mccorkle Creek at three locations. That information can be found below in Table 1 and Figure 1.

Table 1. Flow data in cfs from McKorkel Creek, Idaho. Data was collected on 9/23/2015.

Site	UTM	E 632006 N4998696	E 631416 N 4998614	E 632303 N 4999517
Discharge (cfs)		0.15	0.27	0.59

Prepared by:
Luke Ferguson Fisheries Technician Payette
National Forest Krassel Ranger District

Caleb Zurstadt
District Fisheries Biologist Payette National Forest
Krassel Ranger District



USDA Forest Service, Payette National Forest
McKorkle Creek Flow Data and eDNA Sites

Management Area 13
Big Creek/Stibnite

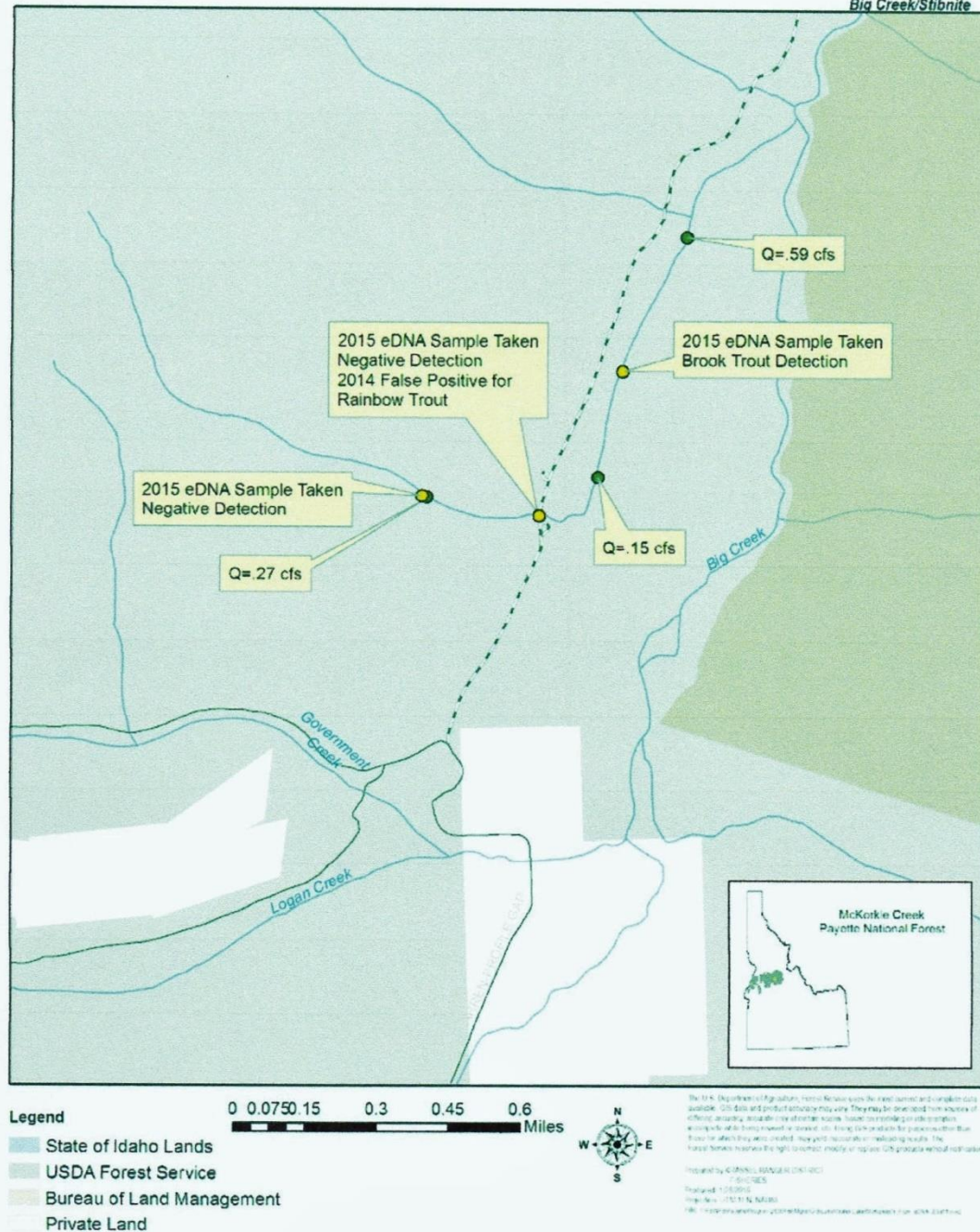


Figure 1. Discharge measurement and eDNA sites on McKorkle Creek, Idaho.



February 6, 2018



C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director
State Historic
Preservation Officer

Administration:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2682
Fax: 208.334.2774

Idaho State Museum:
610 Julia Davis Dr.
Boise, Idaho 83702
208.334.2120

Idaho State Archives
and State Records
Center:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2620

State Historic
Preservation Office:
210 Main St.
Boise, Idaho 83702
208.334.3861

Old Idaho Penitentiary
and Historic Sites:
2445 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2844

Vic Jara
J. Curtis Earl Idaho Aviation Foundation
P.O. Box 2016P
Eagle, ID 83616-9110

Re: Big Creek Hydroelectric Project/ SHPO Review No.: 2018-342

Dear Mr. Jara:

Thank you for consulting with our office on the above reference project. We understand the scope of the work includes relicensing the Big Creek hydroelectric project, originally constructed in 1968. The Project includes a water diversion structure, penstock, powerhouse, transmission line, and access roads associated with the hydroelectric facilities. No additional modifications is planned.

Pursuant to 36 CFR 800.5, we have applied the criteria of effect to the proposed undertaking. Based on the received 24 January 2018, we find that the proposed project actions will result in no historic properties affected (36 CFR 800.4(d)).

In the event that cultural material is inadvertently encountered during the implementation of this project, work shall be halted in the vicinity of the finds until they can be inspected and assessed by the appropriate consulting parties. If you have any questions, or the scope of the work changes, please contact me at elizabeth.witkowski@ishs.idaho.gov or (208) 488-7467.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Elizabeth Witkowski'.

Compliance Archaeologist
Idaho State Historic Preservation Office

ATTACHMENT 5

INSTRUMART

Instrumart is a registered trade name of
Total Temperature Instrumentation, Inc. ("TTI")

35 Green Mountain Drive • S. Burlington • VT • 05403 • USA
P: 802-863-0085 • F: 802-863-1193
www.instrumart.com
DUNS: 197963499 • FEIN: 03-0316999

INVOICE - PAID

Date	Sale #
10/4/2018	CS670654

THIS INVOICE HAS BEEN PAID IN FULL BY CREDIT CARD.
PLEASE USE THIS AS YOUR CREDIT CARD RECEIPT.

Sold To		Ship To	
Idaho Aviation Foundation 1495 E Sales Yard Rd Emmett ID 83616 United States		Vic Jaro Idaho Aviation Foundation 129 / Quail Hollow Buhl ID 83316 United States	
		(208) 404-8627	
Reference/PO#	Shipping Method	Ship Date	
Big Creek Lodge	FREE SHIPPING - FEDEX 3 Day	10/3/2018	
Tracking#	Memo	Payment Method	Credit Card
783064479137		Visa	*****9061
Part Number	Description	Qty	Unit Price Ext. Price COO
DW-G-NZ-F-S-AC-WW-S-G-F	Dynasonics FX-500w Ultrasonic Flow Meter SELECTED OPTIONS: Pipe Size: Adjustable (2 to 10in pipes) Transducer Type: Ultrasonic for 2 to 10in pipes (up to 194°F) Transmitter Type: 24 VDC Remote mounted Display: Standard display with keypad Remote Cable Length: 10 ft. Conduit Length: None Units of Measure: Totalizer/Flow Rate: Gallons / Gallons per minute Tagging: Without	1	2,115.00 2,115.00
* Lifetime Tech Support	Unlimited lifetime technical support via phone (800-235-8367) or email (support@instrumart.com) for the items on this order.	1	0.00 0.00