COVER SHEET

FEDERAL ENERGY REGULATORY COMMISSION

DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE HELLS CANYON PROJECT
Docket No. P-1971-079

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EXECUTIVE SUMMARY

This draft environmental impact statement (EIS) for relicensing the Hells Canyon Hydroelectric Project has been prepared by the staff of the Federal Energy Regulatory Commission (Commission or FERC) to fulfill the requirements of the National Environmental Policy Act (NEPA); the Commission's implementing regulations under Title 18, Code of Federal Regulations (CFR), Part 380; and the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500–1508). The purpose of this document is to inform the Commission, the public, and the various federal and state agencies, tribes, and non-governmental organizations about the potential adverse and beneficial environmental effects of the proposed project and its reasonable alternatives.

The Commission must decide whether to relicense the Hells Canyon Project and, if so, what conditions to place on any license issued. In deciding whether to authorize the continued operation of the hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing a waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the protection of, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality. In this draft EIS, we do not recommend a preferred alternative.

Idaho Power's Proposal

On July 21, 2003, Idaho Power Company (Idaho Power or Applicant) filed an application for license with the Commission for a new license for the Hells Canyon Project, located on the Snake River in Washington and Adams counties, Idaho, and Wallowa and Baker counties, Oregon. The current license expired on July 31, 2005, and the project is operating under an annual license.

The Hells Canyon Project consists of three developments (dams, reservoirs, and powerhouses) on the segment of the Snake River forming the border between Idaho and Oregon. The three developments are Brownlee, Oxbow, and Hells Canyon, which, combined, provide 1,167 megawatts (MW) of power generating capacity.

The Hells Canyon Project is Idaho Power's largest power generating resource, providing approximately 70 percent of Idaho Power's annual hydroelectric generation and about 40 percent of the company's total annual generation. With extensive reservoir storage capacity at the Brownlee development, the Hells Canyon Project provides the major portion of Idaho Power's peaking and load-following capability. In the absence of the Hells Canyon Project, Idaho Power's estimated requirements for new power generating resources over the 2004–2013 planning horizon would more than double to 2,143 MW, and we conclude in the draft EIS that there is a continuing need for the project's power generating capacity.

Specifically, Idaho Power's Proposal has four aspects:

1. Continuing to operate and maintain the existing project facilities, which consist of the following:

   - The Brownlee development, completed in 1958, with facilities that include: (1) a 1,380-foot-long, 395-foot-high, clay-core, earth and rockfill dam; (2) an impoundment approximately 57 miles long with a surface area of 14,621 acres and a total volume of 1,420,062 acre-feet; and (3) a reinforced concrete powerhouse containing five vertical Francis turbine generators, having a combined rated capacity of 585.4 MW.

- The Oxbow development, completed in 1961, with facilities that include: (1) a 960-foot-long, 209-foot-high, clay-core earth and rockfill dam; (2) a 12-mile-long impoundment, with a surface area of 1,150 acres and a total volume of 58,385 acre-feet; (3) a reinforced concrete powerhouse containing four vertical Francis generators, having a combined rated capacity of 190 MW; and (4) a 2-mile-long bypassed reach during low-flow conditions.
- The Hells Canyon development, completed in 1967, with facilities that include: (1) a 910-foot-long, 330-foot-high, cast-in-place concrete gravity dam with integral spillway, intake, and powerhouse sections; (2) a 25-mile-long impoundment, with a surface area of 2,412 acres and a total volume of 167,720 acre-feet; and (3) a reinforced concrete powerhouse constructed against the downstream face of the dam, containing three vertical Francis generators, having a combined rated capacity of 391.5 MW.
- One 19-mile-long, 69-kilovolt transmission line (transmission line 945) running from the Oxbow switchyard to the Pine Creek substation and then to the Hells Canyon substation.
- Four fish hatcheries and three adult fish traps.
- Idaho Power-owned recreational facilities, including: (1) Woodhead Park, (2) McCormick Park, (3) McCormick Overflow, (4) Old Carters Landing, (5) Hibbards landing, (6) Copperfield Park, (7) the Copperfield boat launch, (8) Hells Canyon Park, (9) Airstrip A&B, and (10) several informal camping and access sites.

2. Continuing to operate the project under essentially the same constraints as those that characterize current operations. The project is currently operated to optimize its power and energy production value, subject to compliance with license requirements, flood control mandates, and certain discretionary criteria adopted by Idaho Power. Because most of the usable reservoir capacity in the Hells Canyon Project is contained in the reservoir farthest upstream (Brownlee), operations of all three powerhouses and dams are driven by operations at the Brownlee development. In summary, typical Brownlee operation over the course of a year consists of the following:
   - Starting in mid-January, Brownlee reservoir is drafted (lowered), under the direction of the U.S. Army Corps of Engineers (Corps), to provide storage space for springtime flood waters.
   - The reservoir refills in late spring, and Idaho Power tries to achieve a near-full condition [elevation 2,069 feet mean sea level (msl)] by early June, while maintaining releases from Hells Canyon dam sufficient to keep the river downstream of Hells Canyon dam above the target flow selected the previous fall for protection of fall Chinook salmon spawning and incubation.
   - Once the reservoir refills, Idaho Power initiates a 30-day period of stable water levels for protection of Brownlee resident fish spawning.
   - During July, Idaho Power typically tries to keep Brownlee reservoir nearly full throughout the month to conserve storage for August, which usually has an above-average monthly system power load, lower market energy availability, and higher average market energy prices. High reservoir levels are also advantageous for reservoir-oriented recreation activities. During August, Idaho Power typically drafts Brownlee reservoir to meet system power loads.

- During late August and through September, Idaho Power adjusts Brownlee reservoir's draft rate so as to be able to achieve the necessary starting elevation for the fall Chinook program. This starting elevation ensures a stable spawning flow during the spawning period and a nearly full reservoir at the end of the spawning period around the first week of December.
- Beginning in mid-October and lasting through early December, Idaho Power maintains a constant outflow from the project, normally between 8,000 and 13,000 cubic feet per second (cfs), to ensure that fall Chinook construct their redds (nests) below a certain target flow elevation.
- Throughout the year, flows are managed to meet a year-round 5,000-cfs minimum flow and a maximum 1-foot-per-hour ramping rate at Johnson Bar, 18 miles downstream of Hells Canyon dam. Also under the current license, Idaho Power operates the project in the interest of navigation to maintain a target flow of 13,000 cfs in the Snake River at Lime Point (downstream of the Salmon River confluence at River Mile 172), at least 95 percent of the time.

3. Implementing a set of 81 environmental measures, the purposes of which include the following:
   - Maintain or improve the quality of project waters;
   - Improve hatchery facilities and operations;
   - Protect fall Chinook salmon;
   - Improve the white sturgeon population;
   - Introduce native salmonids into project tributaries;
   - Protect resident warm-water fish;
   - Acquire and improve approximately 22,761 acres of upland and 821 acres of riparian habitat to benefit wildlife affected by project operation;
   - Control noxious weeds;
   - Protect and interpret archeological and historic resources;
   - Improve recreational sites and facilities; and
   - Improve the appearance of project facilities and minimize visual contrast.
4. Changing the project boundary to exclude 3,800 acres of federal land surrounding the reservoirs above an established reservoir elevation that Idaho Power believes are no longer needed for project purposes.

Staff Alternative

After evaluating Idaho Power's Proposal, along with terms and conditions, prescriptions, and recommendations from resource agencies, tribes, and other interested parties, we compiled a set of environmental measures that we consider appropriate for addressing the resource issues raised in this proceeding. We call this the "Staff Alternative."

Under the Staff Alternative, the project would be operated as proposed by Idaho Power, but with the following additional operational constraints:

- Stricter reservoir refill targets after the flood control season;

- Subject to reconfirmation in 2009, releases from the project to augment downstream flows for the purpose of enhancing juvenile fall Chinook salmon migration conditions;
- Additional ramping restrictions during the fall Chinook rearing period; and
- Warmwater fish spawning protection levels in Brownlee reservoir.

In addition to the foregoing operation-related measures, the Staff Alternative incorporates most of Idaho Power's proposed environmental measures, but with certain modifications. The Staff Alternative also includes 27 environmental measures additional to those proposed by Idaho Power.

Conditions and Recommendations

Section 4(e) of the Federal Power Act gives the Secretaries of the Interior and Agriculture authority to impose conditions on a license issued by the Commission for hydropower projects located on "reservations" under the respective Secretary's supervision. See 16 U.S.C. §§ 796(2), 797(e).

In a January 26, 2006, filing with the Commission, the U.S Department of the Interior (Interior), on behalf of the Bureau of Land Management, submitted 19 preliminary terms and conditions pursuant to section 4(e). On February 27, 2006, Idaho Power filed alternative conditions, under section 241 of the Energy Policy Act of 2005 (EPAct), for all 19 Interior preliminary conditions. In a May 15, 2006, filing, Interior withdrew six of its preliminary conditions, replacing five of them and withdrawing one without substitution. In a January 26, 2006, filing, the U.S. Forest Service (Forest Service) provided 27 preliminary section 4(e) terms and conditions. On February 27, 2006, also under section 241 of EPAct, Idaho Power filed alternative conditions for 20 of the Forest Service preliminary conditions. The Forest Service withdrew and replaced nine of its preliminary conditions in a filing on May 10, 2006, and withdrew and replaced a tenth preliminary condition in a June 9, 2006, filing. For a summary of these preliminary conditions, see section 2.3.1.3.

Section 18 of the Federal Power Act, 16 U.S.C. § 811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the U.S. Department of Commerce (Commerce) and Interior may prescribe.

In a January 26, 2006, filing, Interior (for the U.S. Fish and Wildlife Service) provided preliminary prescriptions for fishways for bull trout, and in a February 27, 2006, filing, Idaho Power, under section 241 of EPAct, presented an alternative to Interior's prescription. Interior's January 26, 2006, filing also requests that the Commission include as a license condition a general reservation of authority to prescribe fishways during the term of a new license. In its January 26, 2006, filing, Commerce (for the National Marine Fisheries Service) elected not to use its fishway authority to require fish passage at any of the project's dams, but, like Interior, requested that the Commission include as a license condition a general reservation of authority to prescribe fishways during the term of a new license. For a summary of these prescriptions, see section 2.3.1.2.

The Staff Alternative includes many measures included in Idaho Power's proposal as well as some of the section 18 and alternative section 18 fishway prescriptions, section 4(e) and alternative section 4(e) conditions, section 10(j) recommendations, section 10(a) recommendations, and measures developed by the staff. We did not include measures in the Staff Alternative that we find are not justified, are unrelated to the project, or would not provide benefits over the staff-developed measures. We address all recommendations throughout this draft EIS and specifically in section 5.2, *Discussion of Key Issues*.

Other Alternatives Considered

Under the No-action Alternative, the project would continue to operate under the terms and conditions of the existing license and of existing settlement agreements or memoranda of understanding or agreement. No new environmental measures would be implemented. We use this alternative to

establish baseline conditions for comparison with Idaho Power's Proposal and the Staff Alternative, and to judge the benefits and costs of any measures that might be required under a new license.

We also considered federal takeover, issuance of a nonpower license, and project retirement, but concluded that none of these alternatives are reasonable in the context of this proceeding.

Project Effects

We summarize the more significant differences between Idaho Power's Proposal and the Staff Alternative in table ES-1. Idaho Power's proposed operation is similar to current operations. Therefore, unless otherwise noted, the ongoing effects of project operation under Idaho Power's Proposal are similar to current conditions.

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Table ES-1. Summary of effects of Idaho Power's Proposal and Staff Alternative. (Source: Staff)

Resource	Idaho Power's Proposal	Staff Alternative
Power Benefits		
Annual generation (MWh)	6,562,244	6,548,812
Net annual benefits	$304,747,000	$288,790,000
Sediment Supply and Transport		
	• Beach and terrace erosion would continue downstream of Hells Canyon dam. • The quantity and quality of spawning gravels downstream of Hells Canyon dam would continue to be affected by project reservoirs trapping sand and gravel.	• Little or no change in beach and terrace erosion, or in spawning gravel quantity or quality, compared to Idaho Power's Proposal. • Monitoring beach and terrace erosion would provide information about the effectiveness of mitigation strategies and support development of possible additional measures.
Water Quality		
Effects of Operations	Compared to natural conditions: • Water temperatures would continue to be cooler in spring and summer and warmer in the fall and winter potentially resulting in reduced salmon and increased stress. • The project would continue to lower DO concentrations in and downstream of Brownlee reservoir affecting habitat suitability for fish. • TDG levels downstream of Hells Canyon dam spillway would continue to exceed the 110-percent of saturation criterion during virtually all spill conditions increasing the likelihood of GBT. • Project operation would continue to result in ammonia and trace metal concentration in the reservoirs and bioaccumulation in fish.	Compared to Idaho Power's Proposal: • The temperature of water released from Hells Canyon dam during the flow augmentation period would be slightly increased in extreme low flow years, but reduced warming would occur as flow passes through the reach due to higher flow volumes. These temperature changes would result in negligible effects on Chinook salmon and other fish downstream of Hells Canyon dam. • DO concentrations would be slightly improved downstream of Hells Canyon dam in extremely low flow years. • TDG exceedances and the likelihood of GBT would increase slightly in early to mid-June in medium-high and extremely high flow years when spills result from maintaining higher pool levels prior to the summer flow augmentation release.

Resource	Idaho Power's Proposal	Staff Alternative
		• Ammonia and trace metals would be flushed from reservoirs more frequently, but bioaccumulation in fish would remain about the same.
Effects of Environmental Measures	• DO supplementation could improve DO levels in the immediate vicinity of the proposed oxygen diffuser system in Brownlee reservoir.	• Revision of the DO supplementation plan to address downstream effects should lead to improved DO levels downstream of Hells Canyon dam during the Chinook salmon spawning period.
	• Flow deflectors at Hells Canyon dam would reduce the frequency of TDG levels exceeding the 110 percent of saturation criterion.	• Installation of spillway deflectors at Brownlee dam and TDG abatement monitoring program should lead to further reduction of TDG levels, less frequent exceedances of the 110-percent of saturation criterion, and reduced potential for gas bubble trauma compared to Idaho Power's Proposal.
		• Monitoring bioaccumulation could lead to better protection of bald eagles.
Aquatic Resources		
Effects of Operations	• Daily flow fluctuations downstream of Hells Canyon dam would continue to reduce the abundance of aquatic invertebrates, the primary food base for fish, by about 10 percent.	• More restrictive ramping rates during rearing period could substantially reduce fall Chinook salmon mortalities due to stranding and entrapment and improve the food base during the fall Chinook rearing season.
	• The reduction in aquatic invertebrates will especially affect fall Chinook salmon juveniles, which rear in shallow areas that are subject to frequent dewatering	• Most available information supports a conclusion that flow augmentation should enhance migration conditions for juvenile fall Chinook salmon, likely increasing adult returns.
	• Migration conditions for juvenile fall Chinook salmon would remain the same as years when flow augmentation water has not been provided from Brownlee reservoir, but would be less favorable than conditions in most of the past 14 years when flows were voluntarily augmented.	• A fall Chinook spawning flow management plan, flow augmentation evaluation report, and monitoring fall Chinook entrapment and stranding should improve the flow management decision process and the overall survival of fall Chinook salmon in the Snake River downstream from Hells Canyon.

Resource	Idaho Power's Proposal	Staff Alternative
Effects of Hatchery Measures	• Improved hatchery facilities and a monitoring and evaluation program would maintain anadromous fish production at current levels.	• Same measures as Idaho Power's Proposal, plus preparation of a hatchery management plan for each hatchery, would maintain anadromous fish production, improve efficiency of operations, reduce adverse effects on federally listed species by minimizing interaction between wild and hatchery fish, and enhance the beneficial use of surplus hatchery fish for restoration and fisheries enhancement activities.
Effects of Other Environmental Measures	• DO supplementation would improve fish habitat in the vicinity of the oxygen diffuser system in the upper end of Brownlee reservoir. • Reductions in TDG exceedances at low and moderate spill rates would benefit aquatic resources by reducing GBT. • Improvement of Hells Canyon dam fish trap would reduce stress and injury to fish by allowing on-site sorting and allow fish tagging activities. • Implementation of upstream passage for native resident salmonids could improve gene flow to some populations, but downstream populations may be reduced due to upstream migration. • Construction of a monitoring weir on Pine Creek would allow further monitoring of bull trout migration and enable downstream transfer of outmigrants past Hells Canyon dam. • Pathogen risk assessment would help manage increased risk of pathogen transfer associated with the proposal.	• Increased DO downstream of Hells Canyon dam could improve spawning success of fall Chinook salmon. • Potentially greater TDG reductions would increase benefits to aquatic resources by further reducing the likelihood of GBT. • Implementation of upstream and downstream passage for native resident salmonids would increase connectivity and gene flow among populations in Pine Creek, Indian Creek, and Wildhorse River. • Construction of weir and trap fishways on Pine Creek, Indian Creek and the Wildhorse River would allow tracking of bull trout population trends and effectiveness monitoring of brook trout control and tributary enhancement efforts. • Benefits of Hells Canyon trap modifications, pathogen risk assessment, tributary enhancement efforts, and nutrient supplementation would be the same as Idaho Power's Proposal. • Brook trout suppression efforts, if successful, would be expanded to include the Wildhorse River and to Pine Creek using methods proven to be successful in Indian Creek.

Resource	Idaho Power's Proposal	Staff Alternative
	• Tributary enhancements and carcass outplants or other nutrient supplementation would benefit bull trout and redband trout within the Pine Creek, Indian Creek, and Wildhorse River basins and smaller tributaries to the project. • Brook trout suppression efforts could reduce competition and hybridization with bull trout in Indian Creek. • Proposed white sturgeon conservation plan and related measures would help rebuild the white sturgeon population in the Swan Falls to Brownlee reach.	• Implementing a white sturgeon conservation hatchery program would be a more assured path to rebuilding and increasing the genetic diversity of white sturgeon populations in the Swan Falls to Brownlee reach, in project reservoirs, and in upstream river segments associated with other Idaho Power projects encompassed in Idaho Power's sturgeon conservation plan. • Gravel augmentation pilot program could lead to improvements in fall Chinook spawning and rearing habitat.
Terrestrial Resources		
Effects of Environmental Measures	• Coordination and planning would improve protection of rare plants and control of noxious weeds. • Transmission line O&M plans for wildlife and botanical resources would reduce potential adverse O&M effects on terrestrial resources. • Management of 20,592 acquired acres and 2,990 Idaho Power acres for wildlife habitat would provide acre-for-acre mitigation for most ongoing project effects on terrestrial resources. • Habitat enhancement at four Snake River islands would improve habitat for waterfowl, nesting waterbirds, raptors, neotropical migrant songbirds, and aquatic furbearers. • Mountain quail enhancement program would improve habitat for mountain quail.	• Rare plant protection and noxious weed control would be essentially the same as Idaho Power's Proposal, with some additional measures to improve efficiency and coordination. • Transmission line O&M plan for terrestrial resources would be essentially the same as Idaho Power's Proposal, with some improved efficiency and coordination and increased raptor protection. • Acquisition and management of wildlife habitat would have essentially the same effects as Idaho Power's Proposal, but would also include measures to address erosion anticipated to occur during new license period as well as the loss of riparian habitat resulting from implementation of staff flow alternative. • Limitation of habitat enhancements to two Snake River islands within the project boundary would yield less habitat improvement than Idaho Power's Proposal.

Resource	Idaho Power's Proposal	Staff Alternative
	• Implementation of an IWHP and a WMMP would improve coordination and management of wildlife habitat in Idaho Power's ownership. • Threatened, endangered, and sensitive species would continue to be managed on a case-by-case basis.	• Improvements to mountain quail habitat would be same as Idaho Power's Proposal. • Application of project-wide wildlife habitat planning would improve coordination of habitat management for lands within the project boundary compared to Idaho Power's Proposal. • Development of project-wide Threatened, Endangered, and Sensitive Species Management Plan would improve efficiency and coordination of protective measures for those species covered by the plan, compared to Idaho Power's Proposal.
Cultural Resources		
Effects of Environmental Measures	• Site monitoring would improve protection of monitored sites. • Site stabilization would protect 7 sites on Brownlee reservoir and 20 sites downstream of Hells Canyon dam, and data recovery at 4 sites would prevent possible future damage. • Establishment of Native American, Euro-American, and Asian-American interpretive sites could contribute to resource protection through visitor education. • Support for local museums would enhance cultural resources protection and education in the local area. • Support for Native American programs would enhance the tribes' informed participation in the management and protection of project resources.	• Development of site monitoring plan would improve efficiency and consistency of monitoring efforts. • Site stabilization, data recovery, and establishment of interpretive sites would achieve the same benefits as Idaho Power's Proposal. • Support for local museums would not be provided. • Support for Native American programs would provide fewer benefits than Idaho Power's Proposal because scholarships would not be provided. • Renewed offer to prepare oral histories for Shoshone-Bannock and Shoshone-Paiute Tribes would potentially enhance cultural understanding. • Development of a plan to implement the deferred study of reservoir water level fluctuation effects on cultural resources would enhance understanding of those effects and form the basis for further protective measures, if needed.

Resource	Idaho Power's Proposal	Staff Alternative
Recreation		
Effects of Operations	• Brownlee reservoir level would continue to support flat-water boating and crappie fishing in the late summer and early fall. • Similar to current conditions, flows downstream of Hells Canyon dam would routinely fall below the Corps' recommended 8,500 cfs safe navigation flow. • Flow fluctuations downstream of Hells Canyon dam would continue to adversely affect boaters and campers.	• Flow augmentation would adversely affect flat-water boating opportunities and crappie fishing compared to current conditions and Idaho Power's Proposal. • Flow augmentation would improve early summer boating opportunities downstream of Hells Canyon dam. • More stabilized flows during the spring downstream of Hells Canyon dam would enhance the quality of the boating experience.
Effects of Environmental Measures	• Preparation and implementation of a recreation plan would benefit recreational visitors by providing improved management of recreational programs. • Numerous proposed improvements would benefit recreational visitors by improving boat moorage, road maintenance, developed and dispersed recreational sites, and boat access in low water years, and would benefit cultural and natural resources by providing additional protection near recreation uses. • Proposed changes in the litter and sanitation management program would substantially improve upon existing conditions. • The Information and Education Plan would promote protection and preservation of cultural, natural, and historic resources.	• Adding specificity to the implementation standards of the recreation plan would clarify plans and improve delivery of the intended benefits. • Expansion of recreation plan to include site improvements at Oasis, Steck recreational site, Farewell Bend State Park, Jennifer's Alluvial Fan, Deep Creek, and the Hells Canyon launch would provide additional recreation benefits compared to Idaho Power's Proposal. • Expansion of the litter and sanitation management program to include a gray water and sanitary cleaning system at the Hells Canyon Creek put-in/take-out would improve the sanitation system and disposal of human waste for boaters. • Increasing the specificity of the Information and Education Plan and including information about aquatic invasive species and anadromous fish would promote additional understanding of and protection for project resources.

Resource	Idaho Power's Proposal	Staff Alternative
	• Funding O&M at its recreational sites and those of BLM and the Forest Service that Idaho Power upgrades would benefit recreational visitors and resource protection by improving maintenance and management at most of the primary recreational sites in the project boundary. • Continuing to provide flow information for flows downstream of Hells Canyon dam would continue to benefit recreational visitors by providing timely information to be used in trip planning. • Continuance of the MOU for staffing the Hells Canyon Visitor Center would continue to benefit visitors at the center. • Preparation of a Recreation Adaptive Management Plan would provide a framework for responding to changes in recreational needs.	• Clarifying O&M funding and responsibilities at Forest Service and BLM recreational sites at the project through consultation as part of the final recreation plan would improve delivery of the intended plan benefits. • Benefits of the flow information system and Hells Canyon Visitor Center staffing would be the same as under Idaho Power's Proposal. • Adding details to the Recreation Adaptive Management Plan concerning the minimum level of recreational use monitoring and consultation every 6 years related to Form 80 filing would improve the responsiveness of the Plan to changing recreational conditions.
Land Management and Aesthetics		
Effects of Operations	• The adverse visual effects of Brownlee reservoir drawdown would continue to occur from about July through October.	• Flow augmentation would lead to earlier and more rapid drafting of Brownlee reservoir starting in late June, exacerbating the negative visual effect of Brownlee reservoir drawdowns.
Effects of Environmental Measures	• Implementation of the HCRMP on project lands would enhance the management, conservation, and protection of natural and cultural resources. • Proposed boundary modifications to exclude 3,800 acres of federal lands from the project boundary would exclude some lands used for project-related purposes.	• Adding specific details to the HCRMP to identify which policies need specific management plans and implementation programs would improve delivery of the intended benefits of the plan.

Resource	Idaho Power's Proposal	Staff Alternative
	• Development of a road management plan, application of the Common Policies of the HCRMP, and continued maintenance of 40 miles of road would lead to improved access, public safety, and resource protection related to those roads • Application of the aesthetic resource elements of the HCRMP would improve the aesthetic appearance of the project. • Reducing the visual contrast of transmission line 945 would enhance the visual experience of visitors.	• Amending the project boundary to include lands acquired for wildlife mitigation, dispersed recreation areas within 200 yards of the shoreline, and the Airstrip, Steck Park, Swedes Landing, and Westfall recreational sites would improve resource protection at those sites; other federally managed lands could be removed from the boundary without adversely affecting resources on those lands. • Including additional consultation in the road management planning process and integrating that process with the HCRMP would help ensure that all project-related roads are appropriately maintained. • Adding aesthetic improvements to Hells Canyon dam would enhance the visual experience for visitors. • Including transmission line aesthetic improvements in the aesthetic elements of the HCRMP would help ensure consistency in the approach to visual resource management.
Socioeconomics		
Effects of Operations	• Potential increase in electricity rates to pay increased cost of producing project power.	• Potentially greater increase in electricity rates to pay increased cost of producing project power. • Flow augmentation could lead to a shift in recreational spending away from warmwater fishing at Brownlee reservoir, affecting related businesses accordingly.
Effects of Environmental Measures	• Spending on environmental measures and increased visitor use could increase local business income, but also increase cost to counties to provide services in the project area.	• Greater spending on environmental measures could lead to greater increase in local business income. • Additional measures to benefit downstream anadromous fish populations and resident fish populations upstream of the project could lead to greater benefits to tribal cultures compared to Idaho Power's Proposal.

Resource	Idaho Power's Proposal	Staff Alternative
	• Wildlife habitat restoration and improved conditions for some aquatic resources would benefit tribal cultures compared to current conditions.	

Notes: BLM – U.S. Bureau of Land Management
DO – dissolved oxygen
Forest Service – U.S. Forest Service
GBT – gas bubble trauma
HCRMP – Hells Canyon Resource Management Plan
IWHP – integrated wildlife habitat program
MOU – memorandum of understanding
MWh – megawatt hours
O&M – operation and maintenance
TDG – total dissolved gas
TMDL – total maximum daily load
WMMP – Wildlife Mitigation And Management Plan

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