

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO-ACTION ALTERNATIVE

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 other alternatives and to judge the benefits and costs of any measures that might be required under a new license. The effects of the No-action Alternative contribute to the character of existing environmental conditions, and we describe them in our discussion of the affected environment (refer to section 3.0). A description follows of the existing project facilities, current operations, and current environmental measures.

2.1.1 Existing Project Facilities

The Hells Canyon Project consists of three hydroelectric developments on the segment of the Snake River that forms the border between Idaho and Oregon. The three developments are Brownlee, Oxbow, and Hells Canyon (see figure 2). River mile (RM) 343 just above the upstream margin of Brownlee reservoir marks the upstream boundary; RM 247 of the Snake River downstream of Hells Canyon dam marks the downstream boundary of the project. The project lies approximately 20 miles northwest of Cambridge, Idaho; 90 miles northwest of Boise, Idaho; and 45 miles east of Baker City, Oregon.

Brownlee dam is farthest upstream at RM 284.6. Flow past Brownlee dam discharges into Oxbow reservoir. Oxbow dam is about 12 miles downstream of Brownlee dam, at RM 272.5. Flow past Oxbow dam discharges into Hells Canyon reservoir. Hells Canyon dam is about 25 miles downstream of Oxbow dam, at RM 247.6. The river downstream of Hells Canyon dam is unobstructed by artificial structures until it reaches the headwaters of Lower Granite reservoir, approximately 100 miles downstream of Hells Canyon dam.

2.1.1.1 Brownlee Development

The existing Brownlee development (figure 3), completed in 1958, consists of: (1) a 1,380-foot-long, 395-foot-high, clay-core, earth and rockfill dam with a single reinforced concrete spillway with seven radial gates, comprising four crest gates and three low-level outlet gates and a 173-foot-wide concrete-lined chute, which impounds (2) the approximately 57-mile-long Brownlee reservoir, with a surface area of 14,621 acres and a total volume of 1,420,062 acre-feet at elevation 2,077 feet mean sea level (msl); (3) a 500-foot-long intake channel excavated into the right rock abutment of the dam, leading to (4) five welded steel penstocks, which carry water to (5) a reinforced concrete powerhouse, containing five vertical Francis turbine generators, having a combined rated capacity of 585.4 MW, releasing flow into (6) two separate tailraces, comprising one 800-foot-long tailrace from the powerhouse section housing units 1 through 4 and one 1,350-foot-long tailrace from the powerhouse section housing unit 5; and (7) appurtenant facilities.

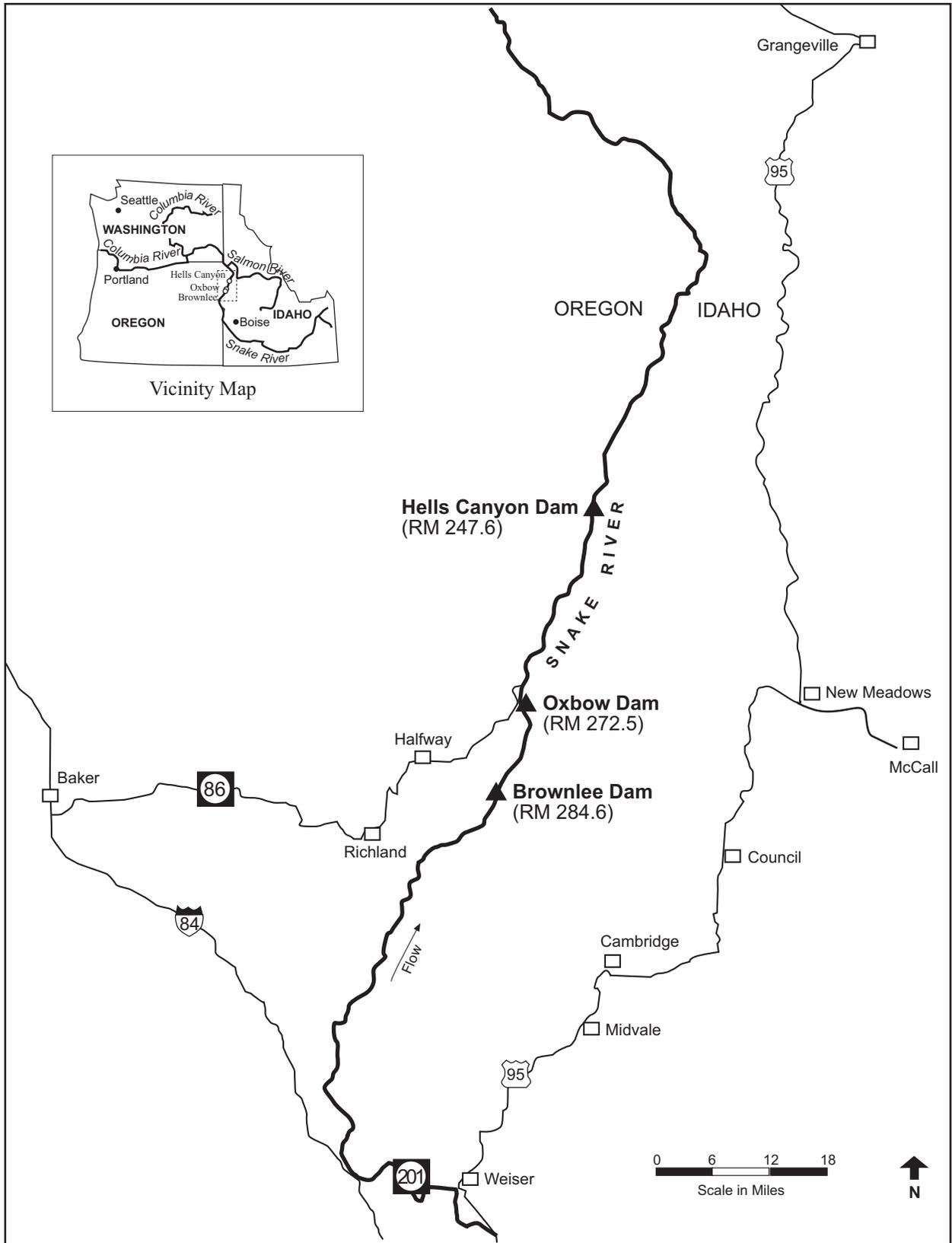


Figure 2. Hydroelectric developments of the Hells Canyon Project. (Source: Staff)

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2.1.1.2 Oxbow Development

The existing Oxbow development (figure 4), completed in 1961, consists of: (1) a 960-foot-long, 209-foot-high, clay-core earth and rockfill dam with two spillways, comprising a 112-foot-wide concrete-lined primary spillway chute on the Oregon side and a 450-foot-long erodible “fuse plug” embankment and a 75-foot-wide concrete-lined emergency spillway chute on the Idaho side, which impounds (2) the 12-mile-long Oxbow reservoir, with a surface area of 1,150 acres and a total volume of 58,385 acre-feet at elevation 1,805 msl; (3) a 106-foot-high reinforced concrete intake structure and two 36-foot-diameter tunnels, one 781-foot-long and one 841-foot-long, connecting the intake structure to two surge tanks; (4) two 173-foot-long, 23-foot-diameter concrete-encased steel penstocks carrying water from the surge tanks to; (5) a reinforced concrete powerhouse containing four vertical Francis generators, having a combined rated capacity of 190 MW, releasing water into (6) a negligible tailrace; and (7) appurtenant facilities. This development has a 2-mile-long bypassed reach, most of which is inundated when Hells Canyon reservoir is at its maximum elevation.

2.1.1.3 Hells Canyon Development

The existing Hells Canyon development (figure 5), completed in 1967, consists of: (1) a 910-foot-long, 330-foot-high, cast-in-place concrete gravity dam with integral spillway, intake, and powerhouse sections, which impounds; (2) the 25-mile-long Hells Canyon reservoir, with a surface area of 2,412 acres and a total volume of 167,720 acre-feet at elevation 1,688 feet msl; (3) three 24-foot-diameter, 164-foot-long, steel penstocks, which carry water to (4) 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, releasing water into (5) an unlined tailrace excavated into the original river channel and bedrock; (6) a reinforced concrete fish trap excavated into the bedrock of the left river bank, immediately downstream of the powerhouse; and (7) appurtenant facilities.

2.1.1.4 Transmission Facilities

One 19-mile-long, 69-kilovolt transmission line (transmission line 945) is included in the license application (figure 6).¹³ The line runs from the Oxbow switchyard to the Pine Creek substation and then to the Hells Canyon substation.

2.1.1.5 Fish Hatcheries and Related Facilities

The project includes four fish hatcheries and three adult fish traps. These facilities, from downstream to upstream, include: (1) the Hells Canyon adult upstream migrant fish trap (see section 2.1.1.3, above); (2) the Oxbow fish hatchery; (3) the Rapid River fish trap; (4) the Rapid River fish hatchery; (5) the Niagara Springs fish hatchery; (6) the Pahsimeroi fish hatchery; and (7) the Pahsimeroi upstream migrant fish trap.

¹³ On March 21, 2005, the Commission amended the existing project license to delete the Boise-Brody No. 2 and Boise-Bench-Midpoint transmission lines from the projects after finding that these lines are not primary transmission lines. On October 28, 2005, the Commission further amended the license to delete the Oxbow-Brownlee, Oxbow-Palette Junction-Hells Canyon, Palette Junction-Imnaha, Boise-Brownlee-Baker, Brownlee-Boise Bench Nos. 3 and 4, and Palette Junction-Enterprise transmission lines, effective on the date Idaho Power receives all necessary permits/approvals from the Forest Service and BLM, as appropriate, for the continued use of National Forest System lands and BLM lands. On December 14, 2006, Idaho Power filed right-of-way grants covering the Idaho BLM sections of these lines.

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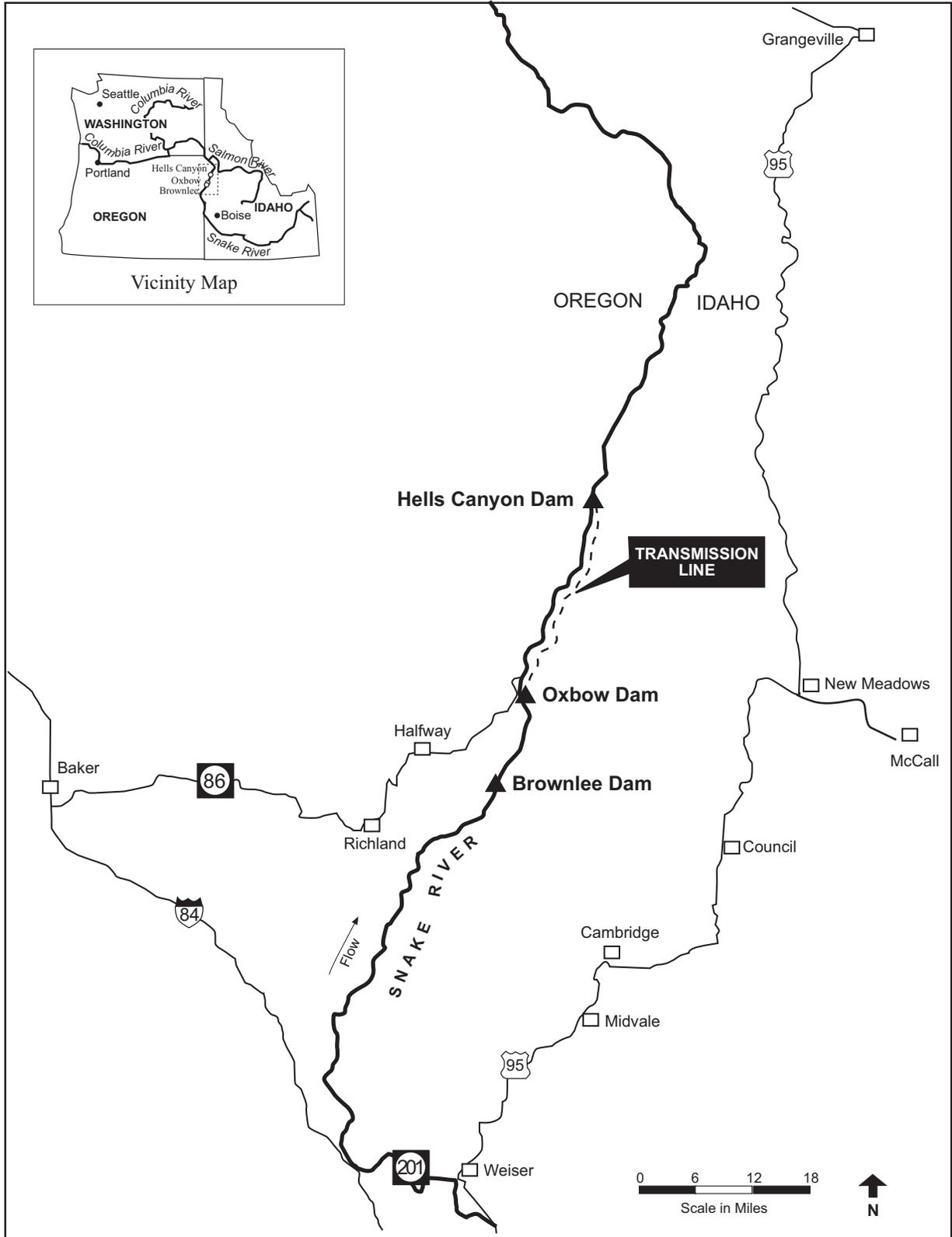


Figure 6. Transmission line associated with the Hells Canyon Project. (Source: Staff)

2.1.1.6 Recreation Facilities

Idaho Power-owned recreational facilities at the project are as follows: (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 B; and (10) several informal camping and access sites. Together, the sites provide numerous opportunities for launching boats; fishing; camping in tents, recreational vehicles (RV)s, and rental cabins; picnicking; and accessing hiking trails.

2.1.1.7 Project Safety

The project has been operating for 49 years under the existing license and during this time Commission staff has conducted operational inspections focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. In addition, the project has been inspected and evaluated every 5 years by an independent consultant and a consultant's safety report has been submitted for Commission review. As part of the relicensing process, the Commission staff would evaluate the continued adequacy of the proposed project facilities under a new license. Special articles would be included in any license issued, as appropriate. Commission staff would continue to inspect the project during the new license term to ensure continued adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance (O&M), and accepted engineering practices and procedures.

2.1.2 Current Project Operations

The three-dam, three-reservoir Hells Canyon Project is operated to optimize its power and energy production value, subject to compliance with license requirements, flood control mandates, and environmental considerations. Because most of the usable reservoir capacity in the Hells Canyon Project is contained in Brownlee reservoir, operations of all three powerhouses and dams are driven by operations at the Brownlee development. All three developments are typically operated in a load-following mode.

2.1.2.1 Brownlee Development

Operation of the Brownlee development varies both seasonally and daily. During the course of a year, the seasonal operation is typically as shown in figure 7. The seasonal fluctuations are the result of the following operational procedures:

- Idaho Power attempts to have a full reservoir by the first week in December to meet winter peak power demands. From early December when the fall Chinook spawning period ends through fry emergence in the spring, flows past Hells Canyon dam are maintained voluntarily to keep the river downstream of Hells Canyon dam above the target flow level selected in the fall. The effect of these maintained flows on Brownlee reservoir depends on the amount of runoff received. With medium and higher-than-normal inflows, minimum target flows downstream of Hells Canyon dam can be maintained without drafting (i.e., lowering) Brownlee reservoir before the spring flood-control draft in mid-January. Under drought conditions, Brownlee reservoir might be drafted during this period to provide the minimum target flow downstream of Hells Canyon dam.

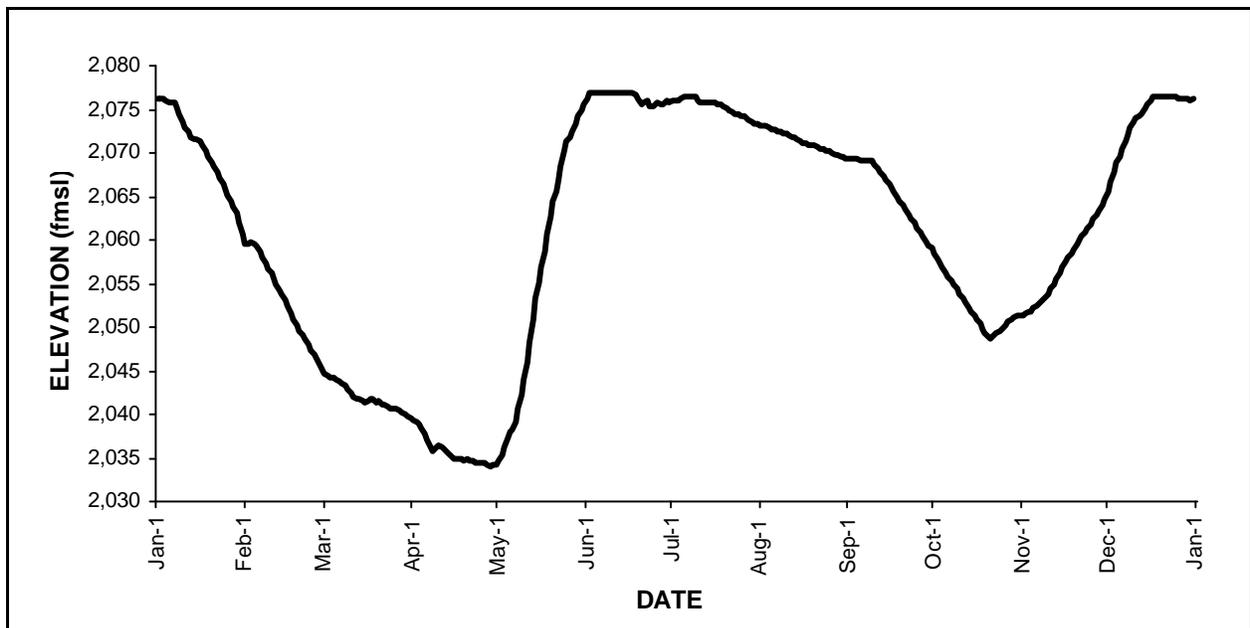


Figure 7. Simulated Brownlee reservoir levels for proposed operations under medium water conditions. (Source: Bowling and Whittaker, 2005, as modified by staff)

- Starting in mid-January, Brownlee reservoir is drafted, under the direction of the U.S. Army Corps of Engineers (Corps), to provide storage space for springtime flood waters. The Northwest River Forecast Center produces the monthly final water-supply forecasts that are used to derive the draft needed by the flood control target dates of February 28, March 31, April 15, and April 30.
- In May, operations depend on hydrologic conditions. During low and medium to low flow years, there is typically no flood control requirement in May. During May, Idaho Power continues to provide minimum flows for fall Chinook protection through their spring emergence. If emergence is completed in May, Idaho Power continues to provide minimum flows and a higher daily pulsed maintenance flow to prevent the stranding of fall Chinook fry that have not yet moved downstream. During medium to high flow years, Brownlee reservoir is typically filling in May, capturing inflows as part of the spring flood control operation. The rate of refill for Brownlee reservoir and outflow from Hells Canyon reservoir are directed by the Corps and vary yearly. Once the elevation of Brownlee reservoir reaches 2,069 feet msl on or after May 20, Idaho Power initiates a 30-day period for protection of Brownlee reservoir resident warmwater fish spawning. During this period, the reservoir is typically not drafted more than 1 foot from the highest elevation reached during the 30-day period. Depending on hydrologic conditions, Brownlee reservoir may be full on May 20 and remain within the top 1 foot for the 30-day period. Consistent with flood control requirements, Idaho Power tries to achieve a reservoir elevation of 2,069 feet msl or higher by June 7.
- June operations also depend on hydrologic conditions. During low and medium to low flow years, there is typically no flood control requirement in June. If fall Chinook emergence has been completed in May, Idaho Power continues to provide minimum flows and a higher daily pulsed maintenance flow to prevent stranding. During medium to high flow years, Brownlee reservoir may continue to refill in June as part of the spring flood control operation, as

directed by the Corps. The 30-day Brownlee reservoir resident warmwater fish spawning period is generally in effect until June 20, during which time the reservoir is typically not drafted more than 1 foot from the highest elevation reached during the 30-day period.

- 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. The target elevation for July 4 is 2,069 feet msl or higher, and, typically, Brownlee reservoir is full or nearly full at 2,077 feet msl on that date.
- During August, Idaho Power typically drafts Brownlee reservoir to meet system power loads. In the latter part of August, Idaho Power examines the streamflow forecast to begin planning reservoir target elevations and Hells Canyon outflows for the upcoming fall Chinook spawning period, which generally starts around the second or third week of October.
- 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. This drafting typically requires that flows past Brownlee dam be increased during this period.
- Beginning in mid-October and lasting through early December, Idaho Power voluntarily maintains a constant flow from Brownlee reservoir, normally designed to maintain a flow between 8,000 and 13,000 cubic feet per second (cfs) downstream of Hells Canyon dam to ensure that fall Chinook construct their redds (nests) below a certain target flow level. The spawning season and minimum flows vary from year to year.
- Throughout the year, flows are managed to meet a required 1-foot-per-hour ramping rate at Johnson Bar, 18 miles downstream of Hells Canyon dam.

On a daily basis, Idaho Power operates the Brownlee powerhouse to meet the flow and reservoir targets described above while maximizing the power and energy production value of the Hells Canyon Project. Normally, flow through the powerhouse is ramped up and down during the course of each day to follow regional electricity demands. Peak flow through the Brownlee powerhouse is 35,000 cfs. Minimum flow may fall to zero during the middle of the night when regional electrical loads are at their minimum. Because of the large size of Brownlee reservoir (14,621 acres at full pool elevation 2,077 feet msl), the daily fluctuation in the reservoir level is 3 feet or less.

2.1.2.2 Oxbow Development

The hydraulic capacity of the Oxbow development is less than the hydraulic capacity at the Brownlee development immediately upstream, and the Oxbow reservoir has limited usable storage capacity. Therefore, Oxbow operations are largely dictated by Idaho Power's operation at Brownlee dam. Specifically, Oxbow reservoir is normally drafted late in the day to provide some storage room for the next day's peak generation period. As system loads climb early the following day, flows through the Oxbow powerhouse are ramped up in concert with the ramping up of flows through the Brownlee powerhouse. The previous night's drafting of Oxbow reservoir enables Oxbow to absorb the peaking flows at Brownlee dam during daily periods of heavy load without having to spill at Oxbow. In keeping with existing license requirements, Idaho Power maintains a 100-cfs year-round minimum release to the bypassed reach.

2.1.2.3 Hells Canyon Development

Because of the limited usable capacity in Hells Canyon reservoir, operations at Brownlee dam and minimum flow and ramping rate restrictions that apply downstream of the development substantially control and limit daily operations at the Hells Canyon development.

Under normal hydrologic conditions, flows through Hells Canyon powerhouse are ramped up in the morning, concurrently with the ramping up of flows at the Brownlee and Oxbow powerhouses, to follow the regional electrical load. Flows through the Hells Canyon powerhouse are ramped down late in the evening to retain as much inflow as possible to use for generating electricity during heavy load periods the following day.

During spring runoff when flow through the Hells Canyon Project exceeds the hydraulic capacity of the power plants, the flow below Hells Canyon dam is controlled by the amount of flow through the project and does not vary by how the powerhouses are operated.

Under Article 43 of the current license, Idaho Power must operate the project in the interest of navigation to maintain 13,000 cfs¹⁴ in the Snake River at Lime Point (RM 172) at least 95 percent of the time, when the Corps determines it to be necessary for navigation. Regulated flows of less than 13,000 cfs at Lime Point are to be limited to July, August, and September, during which time operation of the project is to be in the best interest of power and navigation, as mutually agreed to by the Corps and Idaho Power. The Corps does not require Idaho Power to draft Brownlee reservoir to meet the 13,000-cfs Lime Point flow requirement.

Under the same navigation-related license article, Idaho Power is required to maintain a year-round, 5,000-cfs minimum flow downstream of Hells Canyon dam at Johnson Bar (RM 230). However, as noted above, Idaho Power voluntarily maintains a constant flow from Brownlee reservoir from mid-October through early December that is designed to maintain a flow between 8,000 and 13,000 cfs downstream of Hells Canyon dam. The intent is to ensure that fall Chinook construct their redds below a certain target flow level.

2.1.3 Current Environmental Measures

Currently, in addition to the operation-related measures identified in the preceding section, Idaho Power provides the following environmental mitigation and protection measures:

- preferential use of the upper spillgates at Brownlee dam during spill periods to minimize elevated total dissolved gas (TDG) concentrations (voluntary),
- anadromous fish production at four hatchery facilities (current license requirement),
- O&M of monitors to provide flow information about river flows downstream of Hells Canyon dam, (voluntary),
- implementation of the Memorandum of Understanding between the Forest Service and Idaho Power with regard to staffing the Hells Canyon Visitor Center (voluntary),
- O&M of Idaho Power-managed parks and recreational facilities (current license requirement),

¹⁴ Idaho Power does not explicitly propose 13,000 cfs at Lime Point, but this value is consistent with the flow releases from Hells Canyon dam assumed by Idaho Power for modeling purposes. In the absence of an explicit alternative proposal, we consider it part of Idaho Power's proposed operation. Idaho Power proposes that any navigation flow requirement for the Snake River reach from the Salmon River confluence to Lewiston be measured at McDuff Rapids (RM 175.5), 4 miles upstream of Lime Point

- a litter and sanitation program, which includes recreational waste disposal to prevent waste from contaminating the river (voluntary),
- public safety programs (current license requirement), and
- aid to local law enforcement in Adams County, (voluntary).

2.1.4 Current Project Boundary

The project boundary extends just over 95 river miles, from just above Porter Island at RM 343, within Malheur County, Oregon, about 5 miles northwest of Weiser, Idaho, to Hells Canyon dam (RM 247.6) in Wallowa County, Oregon. On private lands the project boundary is based on reservoir elevations (contour lines). On federal lands the project boundary follows surveyed section lines or sectional subdivision lines of the United States Public Land Survey. The existing project boundary on federal lands thus includes about 3,800 acres above the contour line. Except in a few places where Idaho Power has larger areas of ownership, the project boundary normally measures several hundred feet in width. Notable exceptions are on the lower Burnt River, near Spring Recreation Area; at the upper end of the Powder River pool; and at Brownlee and Oxbow villages.

2.2 IDAHO POWER’S PROPOSAL

2.2.1 Proposed Project Facilities

Idaho Power’s proposed modifications to existing project facilities are limited to those associated with protecting, mitigating, or enhancing environmental conditions (see section 2.2.3, below).

2.2.2 Proposed Project Operations

With one exception, Idaho Power proposes to operate all three developments under the same constraints as those that characterize existing current operations. These operating constraints are summarized in table 2. The exception, where Idaho Power’s Proposed Operations differ from current operations, relates to winter flood control requirements. Specifically, upon a request from the Corps, Idaho Power would provide flood storage at Brownlee reservoir earlier than is currently required. The early flood storage draft would be equivalent to a maximum drawdown rate without spill of 3 feet per day over a 2- or 3-day period, not to exceed a total of 9 feet of drawdown. This provision would apply only to the months of December and January, and it would occur only on a case-by-case request from the Corps.

Table 2. Summary of operating constraints for Idaho Power’s Proposed Operations. (Source: Staff)

Operating Constraint	Brownlee	Oxbow	Hells Canyon
Maximum reservoir elevation	2,077 feet msl	1,805 feet msl	1,688 feet msl
Minimum reservoir elevation	1,976 feet msl	1,795 feet msl	1,678 feet msl
Flood control requirement	Corps flood control rule curve, supplemented with case-by-case request for extra 9 feet during December and January	NA	NA
Daily reservoir level fluctuation	3 feet, except 1 foot during 30-day resident fish spawning period (approximately May 21 thru June 21)	5 feet, except 10 feet under atypical conditions ^a	5 feet, except 10 feet under atypical conditions ^a

Operating Constraint	Brownlee	Oxbow	Hells Canyon
Ramping rate restriction	NA	NA	1 foot per hour (both up and down) ^b
Daily limit between minimum and maximum release	NA	NA	
6/1–9/30			10,000 cfs, except 16,000 cfs under atypical conditions ^a
10/21–12/11 ^c			No load following per fall Chinook plan
Minimum flow	NA	100-cfs bypass flow year-round	
10/21–12/11 ^c			8,000–13,000 cfs per fall Chinook plan ^d
12/12–5/31 ^c			Dependent on most critical shallow redd per fall Chinook plan
6/1–10/20			6,500 cfs, except 5,000 cfs under atypical conditions ^a

Note: NA – not applicable

^a Atypical conditions, as defined by Idaho Power, are conditions when Idaho Power determines that operation of the project (which operation may occur automatically or manually) is needed to: (1) protect the performance, integrity, reliability, or stability of Idaho Power’s electrical system or any electrical system with which it is interconnected; (2) compensate for any unscheduled loss of generation; (3) provide generation during severe weather or extreme market conditions; (4) inspect, maintain, repair, replace, or improve Idaho Power’s electrical systems or facilities related to the Project; (5) prevent injury to people or damage to property; or (6) assist in search-and-rescue activities.

^b Compliance would be measured at Johnson Bar, located approximately 18 miles downstream of Hells Canyon dam.

^c Actual dates vary per fall Chinook plan.

^d The constant fall Chinook flow releases can vary between 8,000 and 13,000 cfs, depending on water-year conditions, forecasts, or turbine performance to minimize unnecessary wear during operation.

2.2.3 Proposed Environmental Measures

Idaho Power proposes the following environmental measures. These measures are grouped by resource topic. Measures numbered 1P through 81P reflect Idaho Power’s original proposal; measures 101P through 113P reflect changes to Idaho Power’s proposal filed between the draft EIS and the final EIS.

Sediment Supply and Transport

101P. Develop and implement a program to monitor beach and terrace erosion, substrate, and gravel.

- 102P. Create a mitigation fund to be used by the Forest Service to restore and maintain 14 acres of sandbars on or adjacent to National Forest System lands between Hells Canyon dam and the confluence of the Snake and Salmon rivers.

Water Use and Quality

- 1P. Continue 100-cfs minimum flow in Oxbow bypass to help maintain water quality in the bypassed reach.
- 2P. Continue recreation waste disposal to prevent waste from contaminating the river.
- 3P. Continue preferential use of the upper spillgates at Brownlee dam during spill periods to minimize elevated total dissolved gas as an interim measure until spillway flow deflectors are installed at Brownlee dam.
- 4P. Implement one of two measures (in-reservoir aeration or upstream phosphorus trading) to fully meet the Snake River-Hells Canyon TMDL Brownlee reservoir DO allocation (an average of 1,125 tons of oxygen during the summer into the transition zone of Brownlee reservoir).
- 103P. Aerate Hells Canyon outflows using a forced air (blower) system at Hells Canyon powerhouse that would add 1,500 tons of oxygen per year.
- 104P. Install and operate a destratification system in the Oxbow bypassed reach at the deep pool just upstream of the Indian Creek confluence to prevent anoxic conditions at this location.
- 5P. Install Hells Canyon dam spillway flow deflectors to reduce TDG levels in the tailrace of Hells Canyon dam and the Snake River downstream of the dam.
- 105P. Install Brownlee dam spillway flow deflectors to reduce TDG levels in Oxbow and Hells Canyon reservoirs and the Snake River downstream of Hells Canyon dam.
- 106P. Evaluate and implement measures on the Oxbow dam spillway or bypassed reach to reduce TDG levels as necessary to meet the Snake River-Hells Canyon TMDL load allocation.
- 107P. Adaptively manage TDG-abatement measures to ensure that Idaho Power meets its TDG load allocation below each of the project dams.
- 108P. Work with ODEQ and IDEQ to develop a TDG monitoring plan that would include monitoring during spill to determine compliance with the TMDL load allocation assigned to Idaho Power.
- 109P. Implement Idaho Power's Temperature Adaptive Management Plan, which would: (1) define the extent of appropriate project temperature responsibility, (2) include an evaluation of potential measures; and (3) identify an appropriate measure(s) for implementation.

Fish and Snails

- 6P. Continue the fall Chinook plan.
- 6Pa. Continue reservoir operations in the fall, winter, and early spring for protection of fall Chinook salmon spawning and salmon incubation.
- 6Pb. Measure 6b in the draft EIS (concerning fall Chinook salmon redd and temperature monitoring) has been replaced by measures 110P and 10S.

- 110P. Implement the Fall Chinook Salmon Spawning and Gravel Monitoring Plan described in appendix B of Idaho Power's comments on the draft EIS.¹⁵
- 7P. Implement the warmwater fish plan.
- 7Pa. Protect peak spawning periods for smallmouth bass and crappie by limiting Brownlee reservoir drafts to no more than 1 foot from the highest elevation reached during a 30-day period starting on May 21, and by maintaining an elevation of at least 2,069 feet msl from the end of the 30-day period through July 4.
- 7Pb. Continue warmwater fish population monitoring to detect long-term effects on fish populations.
- 8P. Implement native salmonid plan.
- 8Pa. Conduct pathogen survey in the Pine-Indian-Wildhorse core area to support development of a pathogen risk assessment plan.
- 8Pb. Prepare and implement a plan to allow for the capture of resident salmonids and other species migrating upstream and for their transfer to areas above Hells Canyon and Oxbow dams. The plan would include modification of the Hells Canyon fish trap to capture juvenile salmonids, construction of facilities for sorting and holding fish and for scanning PIT-tag returns, and potentially expansion to year-round operations. The plan also would include a provision to construct a fish trap at Oxbow dam a minimum of 5 years after the Hells Canyon trap has been modified.
- 8Pc. Prepare and implement a tributary habitat enhancement plan within the Pine Creek, Indian Creek, and Wildhorse River basins and smaller tributaries to the Hells Canyon Project reservoirs.
- 8Pd. Supplement marine-derived nutrients to enhance the forage base within bull trout rearing areas (Pine, Indian, and Wildhorse core area).
- 8Pe. Conduct Eagle Creek presence/absence survey to determine, with statistical probability, the presence or absence of bull trout within the Eagle Creek Basin.
- 8Pf. Design, construct, and monitor a permanent monitoring weir at Pine Creek to establish a long-term monitoring program of fluvial¹⁶ fish migrating upstream and downstream in the Pine Creek System.
- 8Pg. Evaluate the feasibility of, and possibly implement, an experimental brook trout suppression program in Indian Creek.

¹⁵ During the section 10(j) meeting held December 5 to 7, 2006, in Boise, Idaho, Idaho Power stated that this measure should be considered part of its proposal.

¹⁶ Bull trout may exhibit up to three life forms or life history strategies: (1) fluvial fish migrate between streams where they may seek temperature refugia and spawning habitat; (2) adfluvial fish that rear in lacustrine environments but migrate into tributaries for spawning and early rearing; and (3) resident, non-migratory populations.

- 9P. Continue anadromous fish production at hatchery facilities.
 - 9Pa. Continue to operate the Oxbow fish hatchery.
 - 9Pb. Continue to operate the Rapid River fish hatchery.
 - 9Pc. Continue to operate the Niagara Springs fish hatchery.
 - 9Pd. Continue to operate the Pahsimeroi fish hatchery.
- 10P. Upgrade and enhance anadromous mitigation hatchery facilities.
 - 10Pa. Make improvements to the Pahsimeroi fish hatchery to control pathogens, develop a locally adapted steelhead broodstock, and monitor and evaluate hatchery performance.
 - 10Pb. Make improvements to the Oxbow fish hatchery by constructing adult holding pond and spawning facilities, expanding the fall Chinook rearing program, distributing carcasses, generally upgrading the hatchery facilities, and monitoring and evaluating hatchery performance.
 - 10Pc. Make improvements to the Niagara Springs fish hatchery by expanding the hatchery building, acquiring an additional smolt tanker, acquiring a fish marking unit, upgrading employee housing, and monitoring and evaluating hatchery performance.
 - 10Pd. Make improvements to the Rapid River fish hatchery by constructing an adult holding pond and spawning facilities, distributing carcasses, upgrading employee housing, generally upgrading the hatchery facilities, constructing an offsite smolt acclimation/adult collection facility, and monitoring and evaluating hatchery performance.
- 11P. Implement Snake River White Sturgeon Conservation Plan.
 - 11Pa. Assess water quality-related effects on early life stages of white sturgeon in the Swan Falls-Brownlee reach.
 - 11Pb. Translocate reproductive-sized white sturgeon into the Swan Falls-Brownlee reach to increase spawner abundance and population productivity, if water quality is found to be adequate.
 - 11Pc. Develop an experimental conservation aquaculture plan to maintain adequate population size and genetic variability of white sturgeon in the Swan Falls-Brownlee reach, if approved by Idaho Department of Fish and Game (IDFG) and Oregon Department of Fish and Wildlife (ODFW).
 - 11Pd. Make periodic population assessments to monitor white sturgeon populations in the Swan Falls-Brownlee, Brownlee-Hells Canyon, and Hells Canyon-Lower Granite reaches of the Snake River.
 - 11Pe. Monitor genotypic frequencies of white sturgeon between Shoshone Falls and Lower Granite dams.

Wildlife

- 12P. Acquire, enhance, and manage approximately 22,761 acres of upland and 821 acres of riparian habitat in the vicinity of the Hells Canyon Project reservoirs to mitigate for the estimated effects of project operations on wildlife.
- 13P. In cooperation with ODFW and IDFG, enhance habitat on four Snake River islands (Gold, Hoffman, Patch, and Porter) for waterfowl and for threatened, endangered, candidate, and special status species.
- 14P. Cooperate with state and federal wildlife management agencies to enhance low-elevation riparian habitat and reintroduce mountain quail in areas adjacent to the project reservoirs.
- 15P. Through an interdisciplinary team, develop and implement an Integrated Wildlife Habitat Program (IWHP) and Wildlife Mitigation and Management Plan (WMMP) to manage wildlife resources on Idaho Power-owned lands associated with the Hells Canyon Project to ameliorate identified impacts and provide general land stewardship.
- 16P. Develop and implement an operation and maintenance plan for the Pine Creek-Hells Canyon transmission line to minimize effects on wildlife, protect wildlife resources, and enhance habitat conditions.

Botanical Resources

- 17P. Acquire, enhance, and manage upland and riparian habitat to mitigate for the estimated effects of project operations on botanical resources.
- 18P. Formalize cooperative relationships to accomplish noxious weed control and non-native invasive weed management, site monitoring, and re-seeding along the Snake River corridor from Weiser downstream to the confluence of the Salmon River.
- 19P. Formalize cooperative relationships, including establishment of a rare plant advisory board, to protect and monitor sensitive plant sites along the Snake River corridor from the headwaters of Brownlee reservoir downstream to the confluence of the Salmon River.
- 20P. Develop and implement an operation and maintenance plan for the Pine Creek-Hells Canyon transmission line and service road and adaptively manage operation and maintenance activities to minimize adverse effects on botanical resources and manage noxious weeds.
- 21P. Implement cooperative projects recommended by agencies and included in the Transmission Line Operation and Maintenance Plan.

Historic and Archaeological Resources

- 22P. Monitor sites along transmission line 945 that are eligible for inclusion on the National Register of Historic Places (National Register).
- 23P. Monitor the known burial site on Oxbow reservoir.
- 24P. Monitor known eligible sites on Oxbow and Hells Canyon reservoirs.
- 25P. Monitor known eligible sites on Brownlee reservoir.
- 26P. Monitor known eligible sites downstream of Hells Canyon dam.
- 27P. Stabilize approximately 20 archaeological sites downstream of Hells Canyon dam after identifying sites requiring stabilization.

- 28P. Stabilize seven archaeological sites on Brownlee reservoir.
- 29P. Recover archaeological data at four archaeological sites on Brownlee reservoir to prevent possible damage by reservoir operations.
- 30P. Establish Native American interpretive sites on Brownlee reservoir to enhance visitors' awareness of Native American presence and land use in the project area.
- 31P. Establish Native American interpretive sites on Oxbow and Hells Canyon reservoirs to enhance visitors' awareness of Native American presence and land use in the project area.
- 32P. Establish European-American interpretive sites on Brownlee, Oxbow, and Hells Canyon reservoirs to enhance visitors' awareness of European-American presence and land use in the project area.
- 33P. Establish Asian-American interpretive sites on Brownlee, Oxbow, and/or Hells Canyon reservoirs to enhance visitors' awareness of Asian-American presence and land use in the project area.
- 34P. Support European-American and Asian-American interpretive projects by assisting local community museums with collections acquisition, display, and curation related to Hells Canyon area trappers, miners, homesteaders, ranchers, and river runners of European and Asian descent.
- 35P-40P. Provide support for Native American programs of the Burns Paiute Tribe, Confederated Tribes of the Warm Springs Indian Reservation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Shoshone-Paiute Tribes, and Shoshone-Bannock Tribes in their efforts to obtain funding for participating in and/or administering cultural resources protection, mitigation, and enhancement measures, educating their youth by providing scholarship/training funds, and providing funds to facilitate several cultural enhancement programs.
- 41P. Fund additional section 106 projects to protect sites and mitigate for any unforeseen adverse effects attributed to Hells Canyon Project operations.

Recreational Resources

- 42P. Continue to operate and maintain monitors to provide flow information about river flows downstream of Hells Canyon dam.
- 43P. Continue the Memorandum of Understanding between the Forest Service and Idaho Power with regard to staffing the Hells Canyon Visitor Center.
- 44P. Continue existing general measures for all zones.
 - 44aP. Continue the litter and sanitation program.
 - 44bP. Continue public safety programs.
 - 44cP. Continue aid to local law enforcement in Adams County.
 - 44dP. Continue road maintenance.
 - 44eP. Continue operation and maintenance of Idaho Power-managed parks and recreational facilities.

- 45P. Provide additional boat moorage on Hells Canyon Project reservoirs to improve angling access.
- 46P. Enhance Litter and Sanitation Plan to improve litter cleanup and access to portable and vault toilets at dispersed recreational sites.
- 47P. Develop and implement an integrated information and education (I&E) plan to promote protection and preservation of cultural, natural, and historic resources through education.
- 48P. Coordinate the prioritization of law enforcement resource use among appropriate law enforcement agencies to address public safety issues.
- 49P. Develop and implement a Recreation Adaptive Management Plan (RAMP) to identify and address the adequacy of Idaho Power's Recreation Plan over the life of the new license.
- 50P. Enhance road maintenance to improve public safety and further protect at-risk cultural and natural resources.
- 51P. Perform O&M at Idaho Power-enhanced BLM sites and all Forest Service reservoir-related recreation sites consistent with the settlement (FS modified 4(e) condition no. 18) to benefit recreation, provide public access, enhance visitor services and user satisfaction, and reduce the responsibilities of federal agencies to provide operations and maintenance services. This measure includes a safety review and improvements of the Deep Creek Trail (FS modified 4(e) condition no. 16), and brings the Deep Creek Trail into the project boundary.
- 52P. Enhance Eagle Bar dispersed recreational site and improve boat ramp access to Hells Canyon reservoir.
- 53P. Develop site plan for Big Bar recreation site consistent with the settlement (FS modified 4(e) condition no. 13).
- 54P. Measure 54 in the draft EIS (boat ramp and associated facilities at Big Bar section D) has been incorporated into Idaho Power measure 52P.
- 55P. Develop site plan and enhance Eckels Creek dispersed recreational site to benefit recreation and provide cultural and natural resource protection.
- 56P. Supplement the existing O&M budget to accommodate enhancements at Idaho Power-managed parks and recreational facilities.
- 57P. Develop and implement a site plan for the Copper Creek dispersed recreational site to benefit recreation and provide cultural and natural resource protection.
- 58P. Reconstruct Hells Canyon Park to benefit recreation, improve public access, and protect cultural and natural resources.
- 59P. Develop Airstrip A&B dispersed recreational site to benefit recreation, improve public access, and protect cultural and natural resources.
- 60P. Develop and implement a site plan for Bob Creek Section A dispersed recreational site to benefit recreation, improve public access, and protect cultural and natural resources.
- 61P. Develop and implement a site plan for Bob Creek Section B dispersed recreational site to benefit recreation, improve public access, and protect cultural and natural resources.
- 62P. Develop and implement a site plan for Bob Creek Section C dispersed recreational site to benefit recreation, improve public access, and protect cultural and natural resources.
- 63P. Develop and implement a site plan for Westfall dispersed recreational site to benefit recreation, improve public access, and protect cultural and natural resources.

- 64P. Enhance Copperfield boat launch area to benefit day-use activities.
- 65P. Implement a site plan for Oxbow boat launch to benefit recreation, improve public access, and protect cultural and natural resources.
- 66P. Implement a site plan for Carters Landing and Old Carters Landing recreational sites to benefit recreation, improve public access, and protect cultural and natural resources.
- 67P. Reconstruct McCormick Park to meet current standards of services, benefit recreation, improve public access, and protect cultural and natural resources.
- 68P. Develop and implement a site plan for Hewitt and Holcomb Parks to accommodate recreational use and provide cultural and natural resource protection.
- 69P. Develop and implement a site plan for a low-water boat launch at or near Swedes Landing to improve boat access to Brownlee reservoir during seasonal reservoir drawdowns and periods of low reservoir levels.
- 70P. Develop and implement a site plan for Swedes Landing to benefit recreation, improve public access, and protect cultural and natural resources.
- 71P. Develop and implement a site plan for Spring recreational site to enhance recreational facilities and improve boat ramp access to Brownlee reservoir.

Land Management and Aesthetics

- 72P. Implement the Hells Canyon Resource Management Plan (HCRMP), creating virtual buffer zones between some otherwise incompatible uses, to establish or maintain compatibility between and among the various land and water uses near the Hells Canyon Project.
- 73P. Incorporate aesthetic concerns when upgrading or repairing the existing transmission line 945.
- 111P. Implement the aesthetic improvements to the Hells Canyon dam site and recreational portal, consistent with the settlement (FS modified 4(e) condition no. 22).
- 112P. Implement the Scenery Management Plan, consistent with the settlement (FS modified 4(e) condition no. 24).
- 74P. Measure 74 in the draft EIS (standards and guidelines for physical structures) is incorporated in measure 112P.
- 75P. Measure 75 in the draft EIS (transmission line aesthetics) is incorporated in measure 112P.
- 76P. Measure 76 in the draft EIS (general aesthetic clean-up plan) is incorporated in measure 112P.
- 77P. Measure 77 in the draft EIS (guard rails and Jersey barriers) is incorporated in measure 112P.
- 78P. Measure 78 in the draft EIS (visual contrast) is incorporated in measure 112P.
- 79P. Cooperate with BLM and the Forest Service to develop and assist them with implementing proposed design standards and guidelines at specific BLM and Forest Service facilities, including the Spring recreational site on Brownlee reservoir (BLM), Copper Creek trailhead on Hells Canyon reservoir (BLM), and Big Bar and Eagle Bar on Hells Canyon reservoir (Forest Service).
- 80P. Provide signs and/or facilities that interpret some elements of the Hells Canyon Project that cannot be effectively modified to reduce their visual contrast.

- 81P. Implement the common policies of the HCRMP to provide for the management, protection, and/or conservation of natural and cultural resources.
- 113P. Provide the Forest Service with a map and aerial photos depicting the approximate location of the project boundary together with Geographic Information System (GIS) shapefiles with Metadata for the project boundary on National Forest System lands. The project boundary GIS data would be compatible with Forest Service GIS and would be positionally accurate to ± 40 feet, in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. This measure is consistent with the settlement (FS modified 4(e) condition no. 26).

2.2.4 Proposed Project Boundary

Idaho Power proposes to change its project boundary to exclude 3,800 acres of federal land surrounding the project reservoirs above an established reservoir elevation that it believes are no longer needed for project purposes.

2.3 MODIFICATIONS TO IDAHO POWER'S PROPOSAL

2.3.1 Mandatory Conditions

2.3.1.1 Water Quality Certification

Under section 401 of the Clean Water Act (CWA), 33 U.S.C. § 1341, a license applicant must obtain certification from the appropriate state pollution control agency verifying compliance with the CWA. In July, 2005, Idaho Power initially filed requests for water quality certification with the Idaho Department of Environmental Quality (IDEQ) and the Oregon Department of Environmental Quality (ODEQ), which Idaho Power subsequently withdrew. On December 27, 2005, Idaho Power filed new water quality certification requests with the two agencies; the two agencies received the re-filed request on the same day. On February 22, 2006, ODEQ requested additional information pertaining to the revised application, and Idaho Power provided the agency with addenda addressing temperature, DO, and TDG on March 31, 2006. On October 5, 2006, Idaho Power withdrew its application for water quality certification with IDEQ and ODEQ, noting that more work was needed relative to resolving water quality issues than could be accomplished within the 1-year timeframe allowed for the agencies to take action on the applications. On January 31, 2007, Idaho Power filed new applications for water quality certification with IDEQ and ODEQ (Idaho Power, 2007a). Decisions by the two state water quality agencies are pending, with the certifications due by January 31, 2008.

2.3.1.2 Section 18 Fishway Prescriptions

Federal Section 18 Fishway Prescriptions

Section 18 of the FPA, 16 U.S.C. § 1341, states that the Commission must require the construction, maintenance, and operation by a licensee of such fishways as the Secretaries of Commerce and Interior may prescribe.

In its January 26, 2006, filing, the U.S. Department of the Interior (Interior) (for the U.S. Fish and Wildlife Service [FWS]) provided preliminary prescriptions for fishways for bull trout. Interior prescribed that the licensee: (1) continue to rehabilitate, operate, maintain, and monitor the Hells Canyon trap-and-haul fishway; (2) construct, operate, and maintain a future fishway/trap at the base of Oxbow dam; (3) construct, operate, maintain, and monitor permanent weirs and trap and haul fishways near the mouths of Pine Creek, Indian Creek and Wildhorse River for the downstream transport of bull trout to a suitable release point downstream of Hells Canyon dam; and (4) develop a Bull Trout Passage Plan for

implementing the foregoing measures. These measures were discussed in the draft EIS in sections 3.6.2.8, *Resident Fish Passage*; 3.6.2.6, *Anadromous Fish Restoration*; and 3.6.2.7, *Fish Passage Facilities*.

Interior's January 26, 2006, filing also requested that the Commission include as a license condition a general reservation of authority to prescribe fishways during the term of a new license. The reservation of authority includes, but is not limited to, authority to prescribe fishways for spring/summer Chinook salmon, summer steelhead trout, Pacific lamprey, bull trout, redband trout, fall Chinook salmon, white sturgeon, and any other fish to be managed, enhanced, protected, or restored to the Snake River basin during the term of the license.

In its January 26, 2006, filing, the U.S. Department of Commerce (for the National Marine Fisheries Service, NMFS) 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.

Alternative Section 18 Fishway Prescriptions

The Energy Policy Act of 2005 (EPAct) provides parties to this licensing proceeding the opportunity to propose alternatives to preliminary prescriptions. In a February 28, 2006, filing in accordance with section 241 of EPAct, Idaho Power presented an alternative prescription under which Idaho Power would prepare a Bull Trout Passage Plan that would include: (1) final design plans for the Hells Canyon trap modifications; (2) final engineering design plans for the Pine Creek monitoring weir and trap fishway; (3) specific protocols for the period of operation, location of release point, and handling of all life-stages of bull trout and other fish captured at these two facilities; (4) provisions for transport of bull trout between Pine Creek and Hells Canyon dam; (5) an assessment of monitoring necessary to evaluate the potential and risk of introducing deleterious pathogens; and (6) a post-construction monitoring plan. Under this alternative condition, the plan would include a description of specific triggers related to the timeline of construction and implementation of the Oxbow upstream trap fishway, the Indian Creek permanent weir and trap fishway, and the Wildhorse River weir and trap fishway. The plan would also include the specific monitoring necessary to determine when established triggers have been satisfied. The measures are discussed further in sections 3.6.2.8, *Resident Fish Passage*; 3.6.2.6, *Anadromous Fish Restoration*; and 3.6.2.7, *Fish Passage Facilities*.

Pursuant to section 241 of EPAct, Public Law 109-58, and 50 CFR section 221, American Rivers (AR), Idaho Rivers United (IRU), and the Shoshone-Bannock Tribes on February 27, 2006, filed an alternative prescription to NMFS's reservation of authority under section 18 of the FPA. Their alternative prescription calls for: (1) establishment of a Technical Advisory Committee to guide the development and implementation of a fish passage program; (2) modifying and improving the Hells Canyon dam fish trap; (3) providing safe, timely and effective upstream and downstream passage for spring Chinook and steelhead to and from tributaries above and within the project reach; (4) implementing a fish pathogen risk assessment; (5) providing safe, timely, and effective upstream passage for fall Chinook populations above the project. The measures are discussed further in sections 3.6.2.8, *Resident Fish Passage*; 3.6.2.6, *Anadromous Fish Restoration*; and 3.6.2.7, *Fish Passage Facilities*.

The Oregon Water Resources Department (OWRD) also filed an alternative prescription to NMFS's reservation of authority. OWRD's alternative prescription calls for Idaho Power to provide for the safe, timely and effective upstream and downstream passage of spring and fall Chinook salmon and summer steelhead by: (1) developing and implementing a fish passage plan; (2) modifying and improving the Hells Canyon dam fish trap; (3) constructing and operating a downstream passage and collection facility at Hells Canyon dam; (4) implementing fish health monitoring; (5) providing summer steelhead and spring Chinook salmon passage into Pine Creek; (6) providing summer steelhead and spring Chinook salmon passage into the Powder River basin (Eagle, Daly, and Goose creeks); and (7) studying and

providing fall Chinook salmon passage into the Swan Falls to Brownlee reach of the Snake River. The measures are discussed further in sections 3.6.2.8, *Resident Fish Passage*; 3.6.2.6, *Anadromous Fish Restoration*; and 3.6.2.7, *Fish Passage Facilities*.

Modified Section 18 Fishway Prescriptions

On January 3, 2007, Interior filed its modified fishway prescription, which incorporated the trigger criteria proposed by Idaho Power's alternative fishway prescription. The primary differences between Interior's modified fishway prescription and Idaho Power's alternative fishway prescription are: (1) the modified prescription maintains language from the preliminary prescription regarding the need for appropriate attraction flows when the Oxbow dam fish trap is constructed, which Idaho Power omitted; (2) the modified prescription specifies that the Pine Creek weir is to be constructed within two years from license issuance; and (3) the modified prescription includes language to reflect the need for further information and discussion to define the operational period for downstream passage facilities, while Idaho Power's alternative prescription limited the period of operation to October through November. The modified fishway prescription is discussed further in sections 3.6.2.8, *Resident Fish Passage*; 3.6.2.6, *Anadromous Fish Restoration*; and 3.6.2.7, *Fish Passage Facilities*.

2.3.1.3 Section 4(e) Federal Land Management Conditions and Alternative Conditions

Section 4(e) of the FPA, 16 U.S.C. § 797(e), provides that any license issued by the Commission for a project within a federal reservation shall be subject to and contain such conditions as the Secretary of the responsible federal land management agency deems necessary for the adequate protection and use of the reservation. EAct provides parties to this proceeding the opportunity to propose alternatives to the 4(e) conditions specified by the Secretary(ies), and also provides a mechanism for parties to request trial-type hearings regarding issues of material fact that underlie the conditions. Within the proposed project boundary, the Hells Canyon Project occupies approximately 1,510 acres of BLM-administered land and 330 acres of Forest Service land (see section 3.12.1.2, *Land Ownership and Management Jurisdictions*).

Interior

On January 26, 2006, Interior filed with the Commission 19 preliminary terms and conditions for the proposed relicensing of the Hells Canyon Project. In its filing, Interior stated its intent to file modified terms and conditions, if necessary, by no later than 60 days after closure of the comment period for the Commission's draft EIS.

On February 27, 2006, in accordance with EAct section 241 and 43 CFR Part 45, Idaho Power filed a request for expedited trial-type hearing regarding disputed issues of material fact supporting the preliminary BLM terms and conditions numbered 3, 4, 11, 12, 16, and 19 and proposed alternative conditions to preliminary BLM terms and conditions numbered 1–18. Idaho Power and BLM resolved the differences on all six of the preliminary terms and conditions that were the subject of the Idaho Power request for trial-type hearing, and Interior filed revised preliminary conditions numbered 3, 4, 11, 12, and 16 and withdrew preliminary condition number 19 on May 15, 2006, and Idaho Power filed revised alternative conditions with Interior on May 19, 2006. The Commission's draft EIS, issued July 28, 2006, addressed Interior's terms and conditions as they stood at that time.

On January 3, 2007, Interior filed modified conditions numbered 1–18 pursuant to FPA section 4(e). Interior's modified conditions are listed here and discussed further in section 3.0 within the relevant resource subsections; in section 5.2, *Discussion of Key Issues*; and in section 5.3.2, *Interior and Forest Service 4(e) Conditions*. Appendix C includes the complete text of each of Interior's modified 4(e) conditions.

1. General requirements for Idaho Power activities on or affecting BLM-administered land;
2. Consultation with BLM and preparation of an annual report summarizing progress on implementing articles of the license that would affect recreation, cultural, aquatic, and terrestrial resources administered by BLM on BLM lands within and adjacent to the project boundary;
3. Development and implementation of a Travel and Access Management Plan;
4. Development and implementation of a Law Enforcement and Emergency Services Plan;
5. Revision, finalization, and implementation of the Historic Properties Management Plan for historic properties on BLM-administered lands;
6. Development and implementation of a Comprehensive Recreation Management Plan;
7. Development and implementation of a Litter and Sanitation Plan;
8. Development and implementation of a Project Boat Moorage Plan;
9. Development and implementation of a Site Enhancement Plan for BLM's Airstrip, Bob Creek Section C, and Westfall sites;
10. Development and implementation of a Swedes Landing Enhancement Plan;
11. Development and implementation of a Spring Recreation Site Enhancement Plan;
12. Development and implementation of a Steck Recreation Site Enhancement Plan;
13. Development and implementation of a Jennifer's Alluvial Fan Site Enhancement Plan;
14. Development and implementation of an improvement plan for Site No. 2 below Hells Canyon Bridge and a Litter and Sanitation Plan for that site and other dispersed sites;
15. Development and implementation of Oxbow Boat Launch and Carter's Landing Enhancement Plans;
16. Development and implementation of an Oasis Site Enhancement Plan;
17. Development and implementation of a Copper Creek Site Enhancement Plan; and
18. Development and implementation for a Low Water Boat Launch Plan for a facility at or near Swedes Landing.¹⁷

Forest Service

In January 26, 2006; May 10, 2006; and June 9, 2006, filings, the Forest Service provided preliminary section 4(e) terms and conditions. On February 27, 2006, Idaho Power filed alternative conditions for 20 of the Forest Service preliminary conditions and requested a hearing on 10 of the preliminary conditions (nos. 4, 5, 6, 7, 8, 9, 12, 20, 21, and 25). All 10 of the issues were resolved prior to hearing, and that resolution was reflected in the Forest Service preliminary conditions addressed in the draft EIS. Ten of Idaho Power's alternative conditions stated in its February 27, 2006 filing (nos. 1, 2, 3, 13, 16, 18, 22, 23, 24, and 26) were subsequently resolved with the Forest Service in a Settlement Agreement reached October 6, 2006. Consistent with the Settlement Agreement, Idaho Power filed with the Commission on October 16, 2006, a statement amending its February 27, 2006, alternative conditions

¹⁷ This condition is to take effect if, within 1 year of license issuance, Idaho Power has not constructed a low water boat launch at Private Dude's Cove and if BLM condition no. 10 for Swede's Landing has not been implemented.

by substituting revised preliminary conditions 1, 2, 3, 13, 16, 18, 22, 24, and 26 and withdrawing alternative condition 23. The Forest Service modified conditions, filed with the Commission November 2, 2006, are listed here and discussed further in section 3.0 within the relevant resource subsection; in section 5.2, *Discussion of Key Issues*; and in section 5.3.2, *Interior and Forest Service 4(e) Conditions*. Appendix C includes the complete text of each modified condition.

1. Forest Service approval of site-specific designs prior to implementation of Idaho Power activities on National Forest System lands;
2. Preparation and implementation by Idaho Power of a Resource Coordination Plan;
3. Preparation and implementation of a Fire Prevention Plan;
4. Creation of a Mitigation Fund to be used by the Forest Service for the purposes of restoring and maintaining 14 acres of sandbars on or adjacent to National Forest System lands between Hells Canyon dam and the confluence of the Snake and Salmon rivers;
5. Preparation and implementation of an Integrated Wildlife Habitat Program and a Wildlife Mitigation and Management Plan;
6. Preparation and implementation of a Land Acquisition and Management Program to meet the purposes of the Integrated Wildlife Habitat Program and Wildlife Mitigation and Management Plan;
7. Preparation and implementation of an Integrated Weed Management Plan;
8. Preparation and implementation of a Threatened and Endangered Species Management and Monitoring Strategy;
9. Preparation of a Sensitive Species Management Plan;
10. Implementation of the Mountain Quail Habitat Enhancement Program;
11. Development and implementation of a transmission line O&M plan;
12. Finalization and implementation the Hells Canyon Complex Comprehensive Recreation Management Plan;
13. Development and implementation of a Big Bar Site Development Plan;
14. Implementation of the Eagle Bar Site Development Plan;
15. Implementation of Idaho Power's proposed Eckels Creek Dispersed Site Development Plan;
16. Condition and safety inspection of Deep Creek Stairway/Trail #218 and correction of any deficiencies;
17. Improvement and maintenance of parking and signage at four Forest Service roadside parking areas along the Hells Canyon reservoir;
18. O&M over the term of a new license at Eagle Bar, Eckels Creek, Big Bar, Hells Canyon reservoir parking areas, Black Point Viewpoint, and dispersed areas on National Forest System lands in the project area pursuant to the Recreation Plan;

19. Management of Hells Canyon reservoir drawdown to minimize effects on recreation resources during the summer months;¹⁸
20. Trail maintenance on nine specified trails;
21. Design, construction, and maintenance of facility enhancements at the Hells Canyon Creek launch site and Visitor Center;
22. Development and implementation of an aesthetic improvement plan for enhancing the upper deck, entrance, and egress areas of Hells Canyon dam;
23. Condition 23 in the draft EIS has been deleted;
24. Preparation and implementation of a Scenery Management Plan for Forest Service lands within the project boundary and adjacent to the project boundary if they are affected by the project;
25. Finalization and implementation of the Historic Properties Management Plan for cultural resources within the APE;
26. Provision of a map and aerial photographs depicting the approximate location of the project boundary, in a form compatible with Forest Service GIS files; and
27. Reservation of authority for the Commission to require any additional measures necessary to ensure the adequate protection and use of the public land reservations under Forest Service authority.

2.3.2 Other Recommendations by Agencies and Interested Parties

2.3.2.1 Section 10(j) Recommendations

Under section 10(j) of the FPA, each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project. The Commission is required to include these conditions unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. Before rejecting or modifying an agency recommendation, the Commission is required to attempt to resolve any such inconsistency with the agency, giving due weight to the recommendations, expertise, and statutory responsibilities of the agency.

Section 10(j) fish and wildlife recommendations were filed by IDFG, Interior, NMFS, and ODFW. Commission staff held a meeting with the agencies and other interested parties in Boise, Idaho, on December 5 through 7, 2006, to discuss and attempt to resolve differences over section 10(j) measures that were not adopted in the draft EIS. Agency recommendations and our attempts to resolve inconsistencies between the agencies' recommendations and the Staff Alternative are discussed further in section 3.0 within the relevant resource subsections; section 5.2, *Discussion of Key Issues*; and section 5.3.1, *Fish and Wildlife Agency Recommendations*.

2.3.2.2 Section 10(a) Recommendations

Under section 10(a) of the FPA, in issuing a hydroelectric license, the Commission must be satisfied that the project to be licensed is best adapted to a comprehensive plan for improving or

¹⁸ If the reservoir is drawn down for protracted periods to more than 5 feet below full pool elevation, this condition would require Idaho Power to reconstruct or modify boat ramps to provide reservoir access.

developing the waterway. In making this judgment, the Commission considers comprehensive plans prepared by federal and state entities, and it considers the recommendations of federal and state agencies exercising administration over flood control, navigation, recreation, cultural, and other relevant resources; the recommendations (including fish and wildlife recommendations) of Native American tribes affected by the project; and the recommendations of local governments, NGOs, and the public.

Section 10(a) recommendations were provided by the Idaho State Historical Society, State of Oregon, NMFS, Forest Service, Corps, State of Idaho, Interior, and the Burns Paiute, Umatilla, Shoshone-Paiute, Nez Perce, and Shoshone-Bannock Tribes. The measures are discussed further in section 3.0 within the relevant resource subsections and in section 5.2, *Discussion of Key Issues*.

2.3.3 Staff Alternative

After evaluating Idaho Power's proposal 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." The Staff Alternative includes some measures included in Idaho Power's proposal, Interior's modified section 18 fishway prescription (see section 5.2.4.4), section 4(e), section 10(j) recommendations, section 10(a) recommendations, and measures developed by the staff.

Under the Staff Alternative, the project would be operated as proposed by Idaho Power (see section 2.2.2, table 2), but with the following operational changes: (1) reservoir refill targets after the flood control season; (2) flow augmentation to enhance juvenile fall Chinook salmon migration conditions; (3) additional ramping restrictions during the fall Chinook rearing period, a seasonal 8,500 cfs minimum flow in medium-low and extremely low water years; and (4) warmwater fish spawning protection levels in Brownlee reservoir. The operational modifications included in the Staff Alternative are as follows:

1. Idaho Power would consult with the Corps to develop a flood control plan for operating Brownlee reservoir consistent with regional and local flood control requirements. Consistent with the flood control plan, Idaho Power would refill Brownlee reservoir to a level between: (a) 1 foot below the April 15 and April 30 required flood control draft; and (b) the required flood control draft on those dates. After April 30, Idaho Power would coordinate the refill of Brownlee reservoir with the Corps, NMFS, ODFW, IDFG, and the interested tribes¹⁹ to ensure that the refill of Brownlee reservoir does not result in unnecessary reductions of spring flows as measured at Lower Granite dam. This measure would not in any way diminish the Corps' discretion over the project's flood control operation.

¹⁹ We use the term "interested tribes" to be inclusive of all tribes that have been active participants in the relicensing proceeding, including the Nez Perce, Umatilla, Shoshone-Bannock, Shoshone-Paiute, and Burns Paiute tribes. Several of these tribes do not have federally recognized treaty fishing rights pertaining to existing anadromous fisheries downstream of the project. However, all of these tribes historically hunted and fished in areas that have been affected by the existence and operation of the project. It is our view that all of these tribes, including those that historically used areas upstream of the project, should be offered the opportunity to participate in consultation regarding measures that could affect anadromous and resident fish (to include measures affecting habitat and water quality), as well as plants and wildlife species of value to the tribes. This view is based on the premise that even measures that would affect only downstream habitat could help increase the abundance of fish that could be used in upstream restoration efforts, and that both fish and wildlife may move among the lands that are or were used by multiple tribes.

2. Consistent with flood control requirements, Idaho Power would refill Brownlee reservoir to full pool (elevation 2,077 feet msl) by June 20 of each year and, in order to enhance migration conditions for juvenile fall Chinook salmon, would release 237 thousand acre-feet (kaf) of stored water from Brownlee reservoir (draft to elevation 2,059 feet msl) between June 21 and July 31, except as may be restricted by the Corps for system flood control between June 20 and July 1. Idaho Power would release at least 150 kaf of this water (draft to elevation 2,066 feet msl) no later than July 15 of each year, but would maintain Brownlee elevations through the Fourth of July holiday to enhance recreational use of the reservoir. Idaho Power would not refill Brownlee reservoir at any time between June 21 and August 31.²⁰
3. The maximum variation in river stage would not exceed 1 foot per hour as measured at the Snake River at Johnson Bar gaging station 13290460 (RM 230), except during the March 15 to June 15 fall Chinook rearing period when the maximum variation in river stage would not exceed 4 inches per hour.
4. From Memorial Day weekend to September 30 in medium-high and extremely high flow years, Idaho Power would provide an instantaneous minimum flow of 8,500 cfs upstream of the mouth of the Salmon River, as measured at the Hells Canyon dam gaging station.²¹ If the 3-day moving average inflow to Brownlee reservoir is less than 8,500 cfs, the instantaneous minimum release required from Hells Canyon dam for the current day would be equal to the previous 3-day moving average.
5. Idaho Power would protect warmwater fish spawning locations in Brownlee reservoir from May 21 through July 4. For the initial 30-day period beginning May 21, Brownlee reservoir would not be drafted more than 1 foot from the highest elevation reached during the 30-day period. From the end of the 30-day period through July 4, the reservoir could be drafted more than 1 foot, but an elevation of at least 2,069 feet above mean sea level would be maintained.²²

In addition to the foregoing operation-related measures, the Staff Alternative incorporates Idaho Power's proposed environmental measures (refer to section 2.2.3), modified as follows:

- 101P—modified to include development and implementation of a 5-year volumetric monitoring of sand and gravel.
- 4P—modified to include development and implementation of a dissolved oxygen (DO) enhancement plan that documents consultation with IDEQ and ODEQ regarding the appropriate DO load allocation for the project, documents efforts to identify upstream phosphorus trading partner(s), evaluates whether reservoir DO supplementation or phosphorus trading is the preferred method for meeting Idaho Power's Brownlee reservoir TMDL DO allocation, evaluates the feasibility and effectiveness of turbine aeration measures at Hells Canyon and Brownlee dams, evaluates the potential for each measure to elevate total dissolved gas to greater than the applicable water quality criterion (i.e., 110 percent of

²⁰ Staff measure 8S would require Idaho Power to prepare a report 6 years after license issuance that summarizes available information on the effectiveness of this measure for improving the migration survival of juvenile salmon and steelhead, and evaluating whether any changes in the timing or quantity of flow augmentation water released from Brownlee reservoir are warranted.

²¹ Staff measure 4S would require Idaho Power to install a new flow compliance gage within 5 miles downstream of Hells Canyon dam. Once it is operational, compliance for the minimum navigation flow would be measured at the new gage.

²² The requirement for warmwater fish spawning protection (item 4, above) would be secondary to any conflicting operational requirement.

- saturation); (2) monitoring the effectiveness of implemented measures; (3) holding annual meetings with ODEQ, IDEQ, ODFW, IDFG, FWS, NMFS, and interested tribes to evaluate whether measures need to be modified or additional measures implemented to meet the DO load allocation for the project; and (4) filing an annual monitoring and implementation report with the Commission that summarizes monitoring results and outlines any modifications or new measures that warrant consideration and/or are proposed for implementation.
- 107P—modified to include: (1) annual meetings with ODEQ, IDEQ, ODFW, IDFG, FWS, NMFS, and interested tribes to evaluate whether measures need to be modified or additional measures implemented to meet TDG responsibility for the project; and (2) filing of an annual report with the Commission that summarizes monitoring results and any modifications or new measures that warrant consideration and/or are proposed for implementation.
 - 109P—modified to include: (1) monitoring of the effectiveness of implemented measures; (2) annual meetings with ODEQ, IDEQ, ODFW, IDFG, FWS, and NMFS to evaluate whether measures need to be modified or additional measures implemented to meet the project’s temperature responsibility; and (3) filing of an annual report with the Commission that summarizes monitoring results and any modifications or new measures that warrant consideration and/or are proposed for implementation.
 - 6Pa—modified to indicate that the stable flows to be maintained below Hells Canyon dam during the fall Chinook spawning season must be between 8,500 and 13,500 cfs, at a level selected (based on runoff forecasts) to ensure that spawning fall Chinook salmon redds are created at elevations that are protected during the winter peak load period.
 - 110P—supplemented to include: (1) annual consultation with NMFS, Interior, IDFG, ODFW, and interested tribes to report on monitoring results to date and to guide monitoring efforts in the coming year; and (2) the development and implementation of a gravel augmentation program if monitoring results indicate that project-related effects on the quantity or quality of spawning habitat are adversely affecting the spawning or incubation success of fall Chinook salmon.
 - 7Pb—modified to include gill netting or other measures to monitor the abundance of channel catfish in project reservoirs; filing of an annual report on the results of warmwater fisheries monitoring including an assessment of any operational effects on warmwater fisheries; and consultation with ODFW, IDFG and BLM on any feasible means to minimize or avoid adverse effects on the warmwater fishery in Brownlee reservoir.
 - 8Pa—included within Idaho Power measure 8Pb.
 - 8Pb—modified to incorporate the FWS modified fishway prescription, which prescribes that Idaho Power prepare a bull trout passage plan that would include: (1) final design plans for the Hells Canyon trap modifications; (2) final engineering design plans for the Pine Creek monitoring weir and trap fishway, and construction of the weir and trap fishway within 2 years of license issuance; (3) specific protocols for the period of operation,²³ location of release point, and handling of all life-stages of bull trout and other fish captured at these two facilities; (4) provisions for transport of bull trout between Pine Creek and Hells Canyon dam; (5) an assessment of monitoring necessary to evaluate the potential and risk of

²³ The period of operation would be determined in consultation with the agencies and tribes, but may include year-round operation.

introducing deleterious pathogens; and (6) a post-construction monitoring plan.²⁴ Under this modified prescription, the plan would include a description of specific triggers related to the timeline of construction and implementation of the Oxbow upstream trap fishway, the Indian Creek permanent weir and trap fishway, and the Wildhorse River weir and trap fishway. The plan would also include the specific monitoring necessary to determine when established triggers have been satisfied.

- 8Pc—modified to include enhancement measures to support redband and bull trout restoration in portions of the Powder and Burnt River basins where such measures would provide substantial benefits to native resident salmonids.
- 8Pf—included within Idaho Power measure 8Pb.
- 8Pg—modified to include implementation of brook trout suppression in the Wildhorse River, and possibly Pine Creek using techniques proven effective in Indian Creek.
- 9P—modified to note that hatchery operations are to be in keeping with any hatchery and genetic management plans (HGMPs)²⁵ that are developed for these hatcheries. We recommend that Idaho Power’s obligation to fund the HGMPs be based on continuation of current smolt production targets, but may include improvements that are needed to better attain goals for adult returns and societal use.
- 11Pb—modified to be dependent upon the findings of an evaluation of alternative approaches for rebuilding white sturgeon populations in affected reaches (part of modified Idaho Power measure 11Pc).
- 11Pc—modified to include a feasibility assessment of alternative approaches for rebuilding sturgeon populations in reaches of the Snake River between Swan Falls and Hells Canyon dams, to include comparison of the risks and benefits of hatchery supplementation with the translocation of juvenile or adult sturgeon.
- 11Pe—modified to exclude genetics monitoring upstream of Swan Falls dam, which is addressed in the licenses for the mid-Snake and C.J. Strike projects.
- 13P—modified to include support for capital improvements needed to implement enhancement projects, as recommended by ODFW and IDFG.
- 14P—modified to include consultation with state and federal wildlife management agencies to develop and implement habitat improvements or relocation projects.
- 15P—clarified to indicate that Idaho Power would establish a terrestrial resource work group to provide consultation in finalizing and implementing the management plan and implementing other measures to prevent wildlife disturbance.
- 16P—combined with Idaho Power measure 20P and reflected in staff measure 13S, below.
- 18P—supplemented to include agency consultation in the development and implementation of a project-wide integrated weed management plan to cover National Forest System and BLM-administered lands within the project boundary and lands affected by the project, as well as Idaho Power’s ownership, and establishment of a Cooperative Weed Management

²⁴ The post-construction monitoring plan for the fish trap at Oxbow dam, if constructed, would include evaluation of flows needed to provide effective passage through the Oxbow bypassed reach.

²⁵ Because the hatcheries are operated by IDFG, HGMPs would be developed by IDFG in consultation with NMFS.

Area (CWMA), as specified by the Forest Service. The plan would cover pesticide reporting to BLM.

- 19P—supplemented to include agency consultation in the development and implementation of a project-wide Threatened, Endangered and Sensitive Species Management Plan for plants and animals to cover National Forest System and BLM lands within the project boundary and National Forest System and BLM administered lands affected by the project and lands affected by the project, as well as Idaho Power’s lands, as described in staff measure 12S, below.
- 20P—combined with Idaho Power measure 16P and reflected in staff measure 13S, below.
- 21P—clarified to indicate that the measure includes agency consultation in the development of the O&M plan.
- 24P—expanded to include all known eligible resources in the areas of potential effect (APE) of these reservoirs.
- 25P—expanded to include all known eligible resources within the APE of the reservoir.
- 26P—expanded to include all known eligible resources in the APE.
- 35P to 40P—modified to delete the funding of scholarships and clarify that support for tribal programs is intended to support the tribes’ participation in natural and cultural resource management.
- 45P—modified to include details of the boat moorage plan as part of the final Recreation Plan.
- 46P—modified to address the need for, location of, and maintenance standards for floating restrooms; to develop maintenance and service standards for trash receptacles; and to design, install, and maintain a graywater carryout system in the vicinity of the Hells Canyon Creek put-in/take-out area.
- 47P—modified to have the I&E plan indicate the location and type of information materials to be provided and include information about anadromous fish, invasive species, and sensitive wildlife.
- 48P—modified to have Idaho Power provide coordination by planning and hosting biannual meetings of the parties responsible for law enforcement in the project, but not funding law enforcement by third parties.
- 49P—supplemented to indicate that the RAMP should address dispersed site management and procedures for recreational use monitoring and reporting and should be part of the overall Recreation Plan.
- 51P—modified to bring into the project boundary dispersed recreational sites that are within 200 yards of project waters as well as Airstrip, Steck Park, Swedes Landing, and Westfall recreational sites and the trail to Deep Creek (see staff measure 23S below).
- 72P—supplemented to include clarifications regarding consultation, coordination, and reporting and to include resource maps, maps depicting road maintenance responsibilities, and maps for public use as part of the proposed GIS atlas of critical and sensitive resources.
- 73P—supplemented to include a monitoring strategy to analyze future modifications to the line, incorporating all viewpoints identified in the Technical Report on Aesthetics from which the line is visible, and a schedule for implementing aesthetic improvements on the line.

- 81P—supplemented to address law enforcement, fire prevention, and road management in the Common Policies.

Finally, the Staff Alternative would also include the following measures additional to those proposed by Idaho Power. Measures numbered 2S through 27S reflect original staff measures presented in the draft EIS; measures 101S through 106S reflect staff measures added between the draft EIS and the final EIS.

- 1S. Staff measure 1S in the draft EIS (beach and terrace erosion, substrate, and gravel monitoring) has been incorporated into Idaho Power’s proposal (measure 101P).

Water Use and Quality

- 2S. Staff measure 2 in the draft EIS (develop and implement a temperature management plan) has been incorporated in Idaho Power’s proposal (measure 109P).
- 3S. Staff measure 3S in the draft EIS (develop and implement a TDG abatement plan) has been incorporated into Idaho Power’s proposal (measure 107P).
- 4S. Develop and implement an operational compliance and water quality monitoring plan to monitor compliance with minimum flows, reservoir levels, and ramping rates specified in the license, and to monitor water quality downstream of Hells Canyon dam. Develop the plan in consultation with IDEQ, ODEQ, IDFG, ODFW, NMFS, FWS, USGS, and interested tribes. The plan should, at a minimum, include:
 - Identification of an appropriate location for continuous monitoring of river flow, stage, water temperature, DO, and TDG within 5 miles downstream of Hells Canyon dam, preferably within 3 miles of the dam;
 - A schedule for the construction of a flow measurement gage at the selected site, and for the installation of water quality monitoring equipment;
 - A description of procedures that would be followed to determine a ramping rate at the new gage site that is equivalent to any ramping rate specified for other locations in the new license;
 - A description of the method that would be used to measure water surface elevations at Brownlee, Oxbow, and Hells Canyon reservoirs, as well as flow rates in the Oxbow bypassed reach; and
 - The time steps for which real-time and historical flow, water surface elevation and water quality information from each location would be posted on the Internet and annually reported to the Commission.
- 5S. If requested by IDEQ or ODEQ, make available tissue samples from white sturgeon within and downstream of the project area and from Brownlee reservoir fish for the purpose of monitoring toxic bioaccumulants. These samples would be collected during the routine population monitoring efforts proposed by Idaho Power (Idaho Power measures 7b and 11d).

Aquatic Resources

- 6S. Every 5 years, file a report that summarizes water quality changes in response to TMDL implementation upstream of Brownlee dam to determine when habitat becomes suitable to support any future reintroduction efforts.
- 7S. Staff measure 7 in the draft EIS (gravel augmentation pilot program) has been deleted.

- 8S. Six years after license issuance, prepare a flow augmentation evaluation report that evaluates the efficacy of flow augmentation water provided from Brownlee reservoir for aiding the downstream migration of juvenile salmon and steelhead; to include consideration of how these releases are coordinated with flow augmentation water contributed from the Snake River basin upstream from Brownlee dam and from Dworshak reservoir; and to include any recommendations, for Commission approval, for modifying flow augmentation releases from Brownlee reservoir.
- 9S. Develop and implement a stranding and entrapment management plan to evaluate, and if needed, develop and implement approaches to protect and enhance rearing juvenile fall Chinook salmon and bull trout downstream of Hells Canyon dam.
- 101S. Develop and implement an invertebrate monitoring plan to evaluate trends in the abundance and distribution of rare and sensitive species of mollusks, as well as to evaluate the effects of load following operations on rare and sensitive mollusks and the food supply available to fall Chinook salmon and to bull trout. As part of the plan, prepare annual monitoring reports and provide for updates to the monitoring plan every 5 years, addressing the need to alter project operations or implement other measures to address project effects based on monitoring results.
- 10S. Develop and implement a fall Chinook spawning and incubation flow management plan to determine appropriate monitoring methods to assist with determining flow levels to be maintained downstream of Hells Canyon dam during the fall Chinook spawning and incubation season. The plan should be developed in consultation with NMFS, FWS, IDFG, ODFW, and the interested tribes.
- 102S. Fund the development and implementation of a HGMP for each mitigation hatchery, including establishment of mitigation goals, but retaining current smolt production targets. As part of the plan, prepare annual reports on the hatchery program, including data on adult returns, to ensure the goals and objectives of the plan are being met.
- 103S. Develop a plan, in consultation with the Shoshone-Bannock Tribes, IDFG, NMFS, and FWS, to design, construct, and operate facilities on the Yankee Fork to collect, spawn, and incubate 1,000,000 steelhead or Chinook salmon eggs to support the Shoshone-Bannock Tribe's existing streamside incubator program. The facilities would need to be operated in compliance with a HGMP²⁶ approved by NMFS. Production numbers from the Yankee Fork hatchery should be included in the annual reports on the hatchery program prepared by Idaho Power (102S).
- 104S. In consultation with ODFW, IDFG, FWS, NMFS, and interested tribes, develop and implement a plan to use surplus adult hatchery spring Chinook salmon and steelhead to: (1) provide marine nutrients and improve forage for bull trout in tributaries within the project area; (2) facilitate the evaluation of spawning success, egg viability and survival, and smolt outmigration and survival in Pine Creek; and (3) support ceremonial, subsistence, and recreational fisheries in select tributaries to the Snake River, including the Salmon River basin where appropriate.
- 105S. Participate in regional forums on lamprey restoration in the Snake River basin, file a summary of the activities with the Commission every 3 years, and identify and implement any feasible measures to address project effects on Pacific lamprey.

²⁶ Because the facilities would be operated by the Shoshone-Bannock Tribes, the HGMP would be developed by the tribes in consultation with NMFS.

- 106S Hold annual meetings of the White Sturgeon Technical Advisory Committee to review the results of past monitoring and enhancement efforts, and to guide such efforts in the upcoming year, and file with the Commission an annual report on the results from the previous year of monitoring and enhancement efforts, and any recommendations for revising the monitoring or enhancement measures.

Wildlife and Botanical Resources

- 11S. Develop and implement a plan to assess the feasibility of stabilizing/revegetating erosion sites around project reservoirs and along the river downstream of Hells Canyon dam; implement a pilot project and monitor results to determine feasibility of implementing a long-term stabilization/revegetation program; and, if erosion predicted to occur during the new license period cannot be stabilized, acquire up to 70 acres of riparian habitat in coordination with Idaho Power measure 12P, above.
- 12S. Develop and implement a project-wide Threatened, Endangered, and Sensitive Species Management Plan to address plants (in coordination with Idaho Power measure 19P, above) and animals, including bald eagles, southern Idaho ground squirrel, bats, amphibians, and reptiles.
- 13S. Develop and implement a Transmission Line Operation and Maintenance Plan for transmission line 945 to address protection and enhancement of wildlife and botanical resources, including monitoring electrocution and collision mortality and scheduling O&M to minimize disturbance to wintering mule deer.
- 14S. In coordination with Idaho Power measure 12P, above, acquire 13.2 acres of riparian habitat to mitigate for the loss of riparian habitat predicted to occur as the result of implementing the staff's alternative flow measures; and 49 acres of riparian habitat to address the loss of suitable substrate for native willows along the Snake River downstream of Hells Canyon dam.
- 15S. Extend the WMMP to apply to all lands within the project boundary, including National Forest System and BLM-administered lands, as well as Idaho Power lands. As part of the WMMP, develop and implement an I&E program to minimize risk of wildlife disturbance. As part of the plan, schedule O&M to minimize disturbance on deer winter range.

Historic and Archaeological Resources

- 16S. Renew the licensee's offer to arrange for oral histories for the Shoshone-Bannock and Shoshone-Paiute Tribes.
- 17S. Develop and implement a monitoring plan for archaeological sites, rock art, and TCPs.
- 18S. Develop a plan to implement Idaho Power's deferred monitoring program concerning effects of reservoir water level fluctuations on cultural resources.
- 19S. Staff measure 19 in the draft EIS (file the Historic Properties Management Plan (HPMP) with 1 year of license issuance) has been dropped because the Commission has ordered the plan filed by August 3, 2008.
- 20S. Develop and implement a program to re-evaluate buildings and structures within the project boundary as they reach 50 years old.

Recreational Resources

- 21S. Finalize the proposed Recreation Plan to add specificity to implementation standards and expand the scope of the plan to address the following additional elements:
- 21Sa. Oasis recreational site improvements;
 - 21Sb. Improved Brownlee reservoir communication system and, if recreational use demonstrates the need, expansion of Steck Park;
 - 21Sc. Control and removal of sediment accumulation at Farewell Bend State Park;
 - 21Sd. Improvements at Jennifer's Alluvial Fan, including toilet facilities, vehicular barriers, signage, and regular maintenance;
 - 21Se. Staff measure 21e in the draft EIS (Deep Creek Trail improvements and incorporation in the project boundary) has been included in Idaho Power's proposal (measure 51P);
 - 21Sf. Improvements at Hells Canyon launch to enhance access and safety, provide potable water, and provide a portable human waste disposal system; and
 - 21Sg. O&M at primary recreational sites within the project boundary and clarification of O&M standards and responsibilities.
- 107S. Consult with ODFW to coordinate and provide form 80 recreational use data on recreational fishing effort in the project vicinity.²⁷
- 108S. As part of the Recreation Plan, consult with the Corps, NPPVA, the Forest Service, and other interested parties to prepare a navigation plan that addresses non-flow measures that could be implemented to improve boating safety downstream of Hells Canyon dam, including the installation of additional stream gages.

Land Management and Aesthetics

- 22S. Develop an Aesthetics Management Plan as part of the Hells Canyon Resource Management Plan to be applied to all lands within the project boundary, including transmission line 945 and the right-of-way, and to include Idaho Power's proposed aesthetic measures (see Idaho Power's proposed aesthetic measures, items 73 through 80 above), a monitoring strategy for all viewpoints established in the Technical Report on Aesthetics, and an estimated maintenance schedule and schedule for implementing aesthetic improvements.
- 23S. Include within Idaho Power's proposed boundary modification to include dispersed recreational sites that are within 200 yards of project waters; Airstrip, Steck Park, Swedes Landing, and Westfall recreational sites; Hells Canyon Creek launch area; Deep Creek trail; and all lands acquired for wildlife mitigation.
- 24S. Provide the Forest Service with aerial photographs at a scale acceptable to the Forest Service showing the approximate location of the project boundary throughout Forest Service-managed lands.

²⁷ Agreed to by Idaho Power during the 10(j) meeting.

- 25S. Coordinate with BLM and the Forest Service concerning project-related activities on lands managed by those agencies.
- 26S. Staff measure 26 in the draft EIS (aesthetics improvement for the upper deck, entrance, and egress of Hells Canyon dam) has been included in measure 111P, above.

Oversight and Adaptive Management

- 27S. Establish Technical Advisory Committees to facilitate consultation on the development and implementation of plans required by the new license and to provide consultation on the ongoing implementation of license requirements using adaptive management principles.

2.3.4 Staff Alternative with Mandatory Conditions

The Department of Commerce (for NMFS) has filed preliminary fishway prescriptions for the project and Interior (for FWS) has filed preliminary and modified fishway prescriptions (see section 2.3.1.2, *Section 18 Fishway Prescriptions*) which, when finalized, the Commission may need to include in a new license for this project. Similarly, Interior (for BLM) and the Forest Service have specified preliminary and modified 4(e) conditions (see section 2.3.1.3, *Section 4(e) Federal Land Management Conditions*) which, when finalized, the Commission may also need to include in a new license for this project. Incorporation of these mandatory conditions into a new license would add three measures that are not included in the Staff Alternative, as follows (see section 2.3.1.3 for the numerical designation of these measures):

- Interior-3—Development and implementation of a travel and access management plan;
- Interior 4—Development and implementation of a law enforcement and emergency services plan; and
- FS-20—Trail maintenance on nine specified trails.

Except for these three measures, all of the mandatory conditions are included in the Staff Alternative.

2.4 OTHER ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

2.4.1 Federal Government Takeover of the Project

We do not consider federal takeover to be a reasonable alternative. Federal takeover of the Hells Canyon Project would require Congressional approval. Although that fact alone would not preclude further consideration of this alternative, there is currently no evidence showing that a federal takeover should be recommended to Congress. No party has suggested that federal takeover would be appropriate, and no federal agency has expressed an interest in operating the Hells Canyon Project.

2.4.2 Issuance of Nonpower License

A nonpower license is a temporary license the Commission would terminate whenever it determines that another governmental agency is authorized and willing to assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. At this time, no government agency has suggested a willingness or ability to take over the project. No party has sought a nonpower license, and we have no basis for concluding that the Hells Canyon Project should no longer be used to produce power. Thus, we do not consider a nonpower license a reasonable alternative in this case.

2.4.3 Project Retirement

Retiring the Hells Canyon Project would require denying Idaho Power's license application and would lead to the surrender and termination of Idaho Power's existing license with any necessary conditions. The project would no longer be authorized to generate power. The Hells Canyon Project is an integral part of Idaho Power's electric generation system, generating an average of about 6,053 gigawatt-hours of electricity annually²⁸ and providing about 40 percent of the utility's total generation. The project serves an important role in meeting both daily and seasonal peaks in power demand in the region and contributes to the reliability and stability of the regional electric system. These benefits would be lost if the project were retired.

Brownlee reservoir is one of several Northwest storage reservoirs that are coordinated to provide flood control protection for the lower Columbia River, a function that would be lost upon project retirement. Camping, flat-water boating and fishing, and other recreational pursuits associated with the reservoirs and reservoir-based recreational sites would also be lost. Additionally, there would be significant costs involved with retiring the project and/or removing any of the project's facilities. Finally, retirement would foreclose any opportunity to implement environmental enhancements that would be funded by Idaho Power associated with the project.

Project retirement with dam removal would provide ecological benefits by restoring passage for anadromous and resident fish in the mainstem Snake River and the lower portions of its tributaries between Hells Canyon and Swan Falls dams, by increasing the availability of winter habitat for mule deer, and by reducing the adverse effects of erosion on beaches and armoring of spawning gravels. However, these ecological benefits would be limited by the existence of other barriers to fish passage on all tributaries, and by the passage of higher nutrient loads to downstream areas and higher water temperatures during the summer months, which could adversely affect anadromous fish habitat in the lower Snake and lower Columbia River migratory corridor. Removing the project dams would also provide opportunities for whitewater recreation and riverine fisheries in areas that are now inundated by the project reservoirs, but it would eliminate flatwater recreation and the existing warmwater fishery in Brownlee reservoir. Because of the importance of the project in meeting regional power needs and flood control requirements, we conclude that the ecological and recreational benefits described above do not warrant a detailed evaluation of the tradeoffs involved in dam removal, and we do not consider project retirement to be a reasonable alternative.

²⁸ Based on January 1, 1981, through December 31, 2001, a period when all three developments were operating.

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