

# CHAPTER 20:

## FISH AND WILDLIFE PROGRAM

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One of the required elements of the Council's power plan, per the Northwest Power Act, is the Council's own fish and wildlife program, reviewed and amended by the Council prior to the development of the power plan under a separate provision of the Act. This chapter is the vehicle by which the Council incorporates into the Seventh Power Plan its *2014 Columbia River Basin Fish and Wildlife Program*. The full text of the 2014 Fish and Wildlife Program is found on the Council's website at <http://www.nwcouncil.org/fw/program/2014-12/program/>. This chapter also explains briefly how the Council, following the Act, integrates the fish and wildlife program into the development of the power plan's new resource strategy, especially so as to guide Bonneville's acquisition of resources to assist in the implementation of the measures in the fish and wildlife program.

The Council developed the 2014 Fish and Wildlife Program following the procedures and standards in Section 4(h) of the Northwest Power Act. That section instructs the Council to call for recommendations and amend the fish and wildlife program "prior to the development or review of the [power] plan." The Council develops the fish and wildlife program based on a set of recommendations from state and federal fish and wildlife agencies and the region's Indian tribes in particular, and from others as well, and after following a lengthy public process involving comments and consultations on those recommendations and on draft program amendments. The resulting final revised fish and wildlife program contains a set of measures and objectives intended to protect, mitigate and enhance fish and wildlife affected by the development and operation of the hydroelectric facilities on the Columbia River and its tributaries while assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply. The Bonneville Power Administration has an obligation, set forth in Section 4(h)(10) of the Act, to protect, mitigate and enhance fish and wildlife affected by the Columbia River hydroelectric facilities "in a manner consistent with" the Council's fish and wildlife program, power plan, and the purposes of the Act. All of the federal agencies responsible for managing, operating and regulating the hydroelectric facilities also have an obligation, in Section 4(h)(11) of the Act, to exercise their statutory responsibilities while taking the Council's fish and wildlife program into account at each relevant stage of decisionmaking processes to the fullest extent practicable.

The Act then also provides, in Section 4(e)(3)(F), that the fish and wildlife program is one element in the power plan, a power plan to be reviewed and developed by the Council in a power planning effort that follows the completion of the fish and wildlife program. The Act itself does not explain what it means for the Council to include the fish and wildlife program in the power plan. But the meaning becomes clear from other power plan provisions, the purposes of the Act, and the inherent nature of crafting a new conservation and generating resource strategy for the region's power system.

Congress, in passing the Northwest Power Act in 1980, anticipated and expected that the Council's fish and wildlife program would contain flow and passage measures that derate the optimal generating capability of the hydroelectric system for the production of electricity, and that such measures were necessary in order to improve survival for salmon, steelhead and other fish and



wildlife affected by the system. The Council's fish and wildlife program does contain, among other measures, mainstem flow and passage measures (including bypass spill for juvenile salmon and steelhead) to benefit fish and wildlife, measures that affect hydroelectric system operations. These flow and passage measures alter power generation at the mainstem dams, shifting flows and generation from winter to spring and summer as reservoir storage operations have changed to benefit fish and wildlife, and reducing potential generation in spring and summer by increasing bypass spill at run-of-the-river mainstem dams to improve fish passage survival. Since 1980, implementation of operations to benefit fish and wildlife has reduced firm hydroelectric generation on average by about 1,100 average megawatts. For perspective, this loss represents almost 10 percent of the hydroelectric system's firm energy generating capability (that is, the amount of energy the system can be expected to generate under the lowest runoff conditions). During that same period, the hydroelectric system's capacity for meeting peak hour demands has decreased by more than 5,000 megawatts. This represents about 20 percent of the hydroelectric system's 4-hour sustained peaking capability. Most of the energy and capacity reductions in the hydroelectric system have occurred gradually over a 30-year period, and the system operations and the regional power system have had ample time to adjust.

Each time the Council considers and adopts a revised fish and wildlife program, it must also assess how the program measures will affect the region's power supply, and then evaluate if it will be possible to accommodate these changes while assuring the region an adequate, efficient, economical, and reliable power supply (AEERPS). The Council's AEERPS conclusion in the fish and wildlife program decision recognizes and assumes that the Council will follow the requirements of the Act in subsequently developing the regional power plan. The power plan is to set forth a scheme for implementing conservation measures and adding generating resources that will guide Bonneville and the region in acquiring the least-cost resources necessary to maintain an adequate, efficient, economical and reliable power supply while also allowing the system operators to reliably deliver the system operations to benefit fish and wildlife. The critical link is that Bonneville has a legal obligation to acquire resources consistent with the Council's power plan not just to meet or reduce its obligations to sell power but also (per Section 6(a)(2)9B) of the Act) "to assist [Bonneville] in meeting the requirements of section 4(h) of this [Act]," that is, to be able to implement the operational and other measures to protect, mitigate and enhance fish and wildlife in a manner consistent with the Council's fish and wildlife program. This is the Council's central responsibility in integrating fish and wildlife and power planning under the Northwest Power Act – assessing the existing system capabilities and then crafting a resource strategy to add least-cost resources over time to keep the electricity supply adequate, efficient, economic and reliable while accommodating a wide range of possible future demand growth scenarios and including the effects of fish and wildlife operations.

How this works in the power planning process following the adoption of the fish and wildlife program is summarized here: As described in the resource chapters above, the Council projects a range of electricity demand scenarios over the next 20 years, and also assesses the amount and status of current electric power resources in the region. The Council then develops a plan for adding the lowest-cost new resources to the regional system, including (as a first priority) cost-effective conservation, and evaluates how well that plan will accommodate projected demand and other effects on the region's power supply and still maintain an adequate and reliable system. The Act also calls for the plan to include a forecast of the resources required to meet Bonneville's load



obligations and the portion of such obligations the Council determines can be met by conservation and by various categories of generating resources.

Consistent with the Act, the Council develops the fish and wildlife program before engaging in this resource assessment because knowing the latest flow and passage operations to benefit fish and wildlife is necessary for the Council to assess the current generating capability of the hydroelectric system at different periods in the year. The amount of hydroelectric generation available is then one factor in assessing the total generating capability of current regional power resources. A change in hydroelectric generation due to a change in operations for fish and wildlife is conceptually similar, in terms of the Council's power planning responsibilities under the Power Act, as any other change that will or might affect the load-resource balance and thus need to be accommodated in the resource plan, including an increase in demand for electricity. The actual assessment of the hydroelectric generating capability for the Seventh Power Plan is described in Chapter 9.

Assessing how fish and wildlife operations (and other factors) affect hydroelectric generation is only part of the Council's considerations in this regard. The Council has to develop the least-cost resource strategy that will not only allow Bonneville and the region to meet or reduce demand for electricity, but also to accommodate and reliably deliver these current system operations, including the operations to benefit fish and wildlife as well as to meet other system needs. New or revised fish and wildlife operations alter the amount of overall energy that the hydropower system can produce, alter the peaking capability of the hydroelectric system, and reduce the flexibility of the system to follow load and balance the output of variable resources, such as wind and solar. The Council's resource strategy looks at resource needs in all these categories -- energy, capacity, and flexibility -- not only to make sure the resources are there to meet demand and ensure reliability but also to make sure the needs for electricity do not impinge on the operations to benefit fish and wildlife.

As guided in large part by the Council's power plans, Bonneville and the other responsible entities have taken the necessary actions since 1980 to accommodate the impacts on the regional power supply of system operations to benefit fish and wildlife. They have done so primarily by implementing conservation measures, and also by developing new generating resources, developing resource adequacy standards, implementing demand response measures to help reduce capacity resource needs and provide reserves, and implementing strategies to minimize power system emergencies and events that might compromise fish operations. The resource acquisitions, especially the conservation measures, have allowed system operators over time to embed reliable fish and wildlife operations into core system operations while maintaining a power supply that is adequate, reliable and affordable.

Another of the expectations of the Power Act is that the power system is to bear the cost of managing and operating the hydroelectric system to improve conditions for fish and wildlife affected by the development and operation of the hydroelectric facilities on the Columbia River and its tributaries. Consistent with the Act, Bonneville and the other regional power system operators implement the fish and wildlife program and protect, mitigate and enhance fish and wildlife by using revenues generated by the hydroelectric system to cover the major portion of the costs of the fish and wildlife program. The regional power system absorbs both the financial effects of fish and wildlife operations that reduce the output and revenue of the system as well as the expenditures on other measures to implement the fish and wildlife protection and mitigation program. In order to do so, the power system must generate sufficient revenue to cover these financial requirements. This



necessarily makes the region's power supply more expensive, as also anticipated by Congress when it passed the Northwest Power Act. The Council's power planning effort under the Act helps again by focusing on the least-cost resources, especially conservation, when deciding what resources must be added to the regional power system not just to meet load but to reliably implement the fish and wildlife program. Due to the power planning work of the Council, system operators have been able to reliably provide the actions specified to benefit fish and wildlife (and absorbed the cost of those actions) while they and others have been able to maintain for the Pacific Northwest an adequate, efficient, economic and reliable electrical energy supply.

