

# The State of the Columbia River Basin

FISCAL YEAR 2020 ANNUAL REPORT



Northwest **Power** and **Conservation** Council

To Congress and Citizens of the Pacific Northwest  
October 1, 2019 - September 30, 2020



Submitted to the  
Committee on Energy and Natural Resources  
United States Senate

Committee on Energy and Commerce  
United States House of Representatives

and

Committee on Natural Resources  
United States House of Representatives

The Northwest Power and Conservation Council was established pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Public Law 96-501) by the states of Idaho, Montana, Oregon, and Washington. The Act authorized the Council to serve as a comprehensive planning agency for energy policy and fish and wildlife policy in the Columbia River Basin and to inform the public about energy and fish and wildlife issues and involve the public in decision-making.

This annual report has been developed pursuant to Section 4(h)(12)(A) of the Northwest Power Act. The Council's bylaws, which include its organizational structure, practices, and procedures, are available to the public at [www.nwcouncil.org/about/policies/bylaws](http://www.nwcouncil.org/about/policies/bylaws).

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January 13, 2021

As executive director of the Northwest Power and Conservation Council, it gives me great pleasure to transmit the Council's Fiscal Year 2020 Annual Report to the United States Congress.

While 2020 was a historic year of hardship, I also remember it as the year I assumed the duties of executive director — only the third in the 39-year history of the Council. It also marked the 40th anniversary of the Northwest Power Act, authorizing the four Northwest states to establish the Council.

Beginning my tenure during a pandemic has had its share of challenges. The transition has been surprisingly smooth, however, thanks to the assistance and professionalism of Council members and staff, and the advice, background information, and perspectives of the many stakeholders tribal sovereigns, and others who gave generously of their time to meet and help me gain insight into the work of the Council.

During 2020, the Council completed a revision of its Columbia River Basin Fish and Wildlife Program and then turned its attention to a revision of the Northwest Power Plan, which will be completed later this year.

The Northwest is at an important inflection point as state policies to address climate change drive decarbonization. Warming weather is changing the region's hydrology, which will affect the environment and the hydropower generated by dams, still our dominant resource.

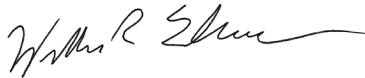
We expect that the plan will include a substantial amount of new renewable resources to meet demand over the next 20 years, the statutory length of the energy forecast in our plan. The Northwest power system is poised to undergo a massive transition from thermal resources to carbon-free renewables, with ramifications for the existing grid, power markets, and the hydrosystem. The Council's planning processes will be more important than ever to understand, and to prepare for, all these challenges.



We also see an inflection point for our fish and wildlife program with the 2020 revision, which was in the form of an addendum to the 2014 Program. The addendum focused on two important activities as we continue to implement the program: the need to improve how the Council and others assess program performance, and the need to further develop and utilize program goals, objectives, and performance indicators to assess performance. In the 2020 Addendum, we reorganized, reformulated, and supplemented program goals, objectives, and indicators.

I invite you to review this report as it provides an overview of the past year's work to meet our responsibilities to protect the fish and wildlife resources of the Columbia River Basin; ensure an adequate, efficient, economical, and reliable power supply; and involve the Northwest public in our decision-making.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Edmonds", with a long horizontal flourish extending to the right.

Bill Edmonds  
Executive Director



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# The Council's View: The State of the Columbia River Basin in 2020

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## Overview

Fiscal Year 2020 was a significant year in many ways, worldwide and here in the Northwest.

Worldwide, it was a year the COVID pandemic caused economic and social havoc, prompted large gatherings to be canceled, slashed business and pleasure travel, and, to protect public health and safety, forced people to stay home, wear face masks when in public places, and close offices for months, including the Council's.

In the Northwest, it was the year the Council completed a revision of its fish and wildlife program; federal agencies issued a court-ordered environmental impact statement and a companion biological opinion on the effects of Columbia and Snake river dams on salmon and steelhead; and new rules were proposed to protect fish from excessive, and in some cases species-threatening predation by fish-eating birds and marine mammals.

It was a year that more coal-fired power plant retirements were announced, and states, cities, and developers focused attention on reducing carbon emissions. Cap-and-trade systems for emissions were debated, fossil fuel bans were considered for new buildings, wildfires in California prompted rolling blackouts as power suppliers struggled to keep up with soaring demand during record heat, and throughout the West new zero-carbon renewable resources were added to the power supply.

## Fish and Wildlife

In 2020, the federal river management agencies issued a court-ordered environmental impact statement (EIS) on future operations of federal hydropower dams in the Columbia River Basin. The EIS analyzes river and dam operations and identifies a preferred alternative to bring the greatest survival benefit to Endangered Species Act-listed salmon and steelhead. The agencies — the U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration — proposed, as their preferred alternative, incorporating the 2019-2021 Flexible Spill Operation Agreement, negotiated in 2019 by federal agencies that operate the dams and sell the hydroelectricity, and also by Oregon and Washington fish and wildlife agencies, and the Nez Perce Tribe. The agreement calls for increasing spill over dams to assist fish passage when power generation is less valuable and decreasing spill when power generation is more valuable. While the Council did not participate in developing the EIS, the Council's November 2017 [Pacific Northwest Power Supply Adequacy Assessment for 2024](#) served as expert input into the federal agencies' modeling of five system operation alternatives. The EIS predicts the preferred alternative will decrease hydropower generation by 210 average megawatts in an average water year and 330 average megawatts in a low-water year.

Suppression of invasive Northern Pike in Lake Roosevelt and the Spokane and Pend Oreille rivers continued in 2020, despite COVID, continuing an effort that has been underway for a decade to control the aggressive predator fish and keep it from spreading

downriver to prey on salmon and steelhead in the Columbia River Basin below Chief Joseph Dam.

Social distancing precautions delayed the start of the work, but the results were promising. Catch rates were low, a good sign, and the Colville Tribes reported nearly 400 pike heads were deposited by recreational anglers in freezers at collection stations for the \$10-per-head reward. Managers plan to continue the suppression work, which includes using gill nets to catch and remove the fish, into the fall.

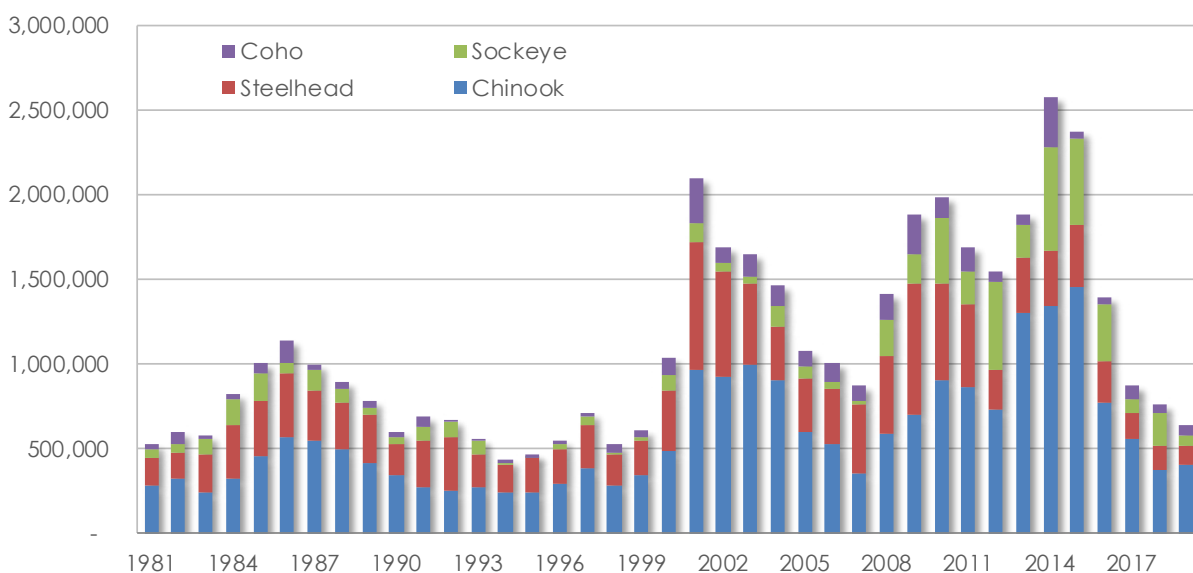
In 2020, the Council approved an addendum to its 2014 Columbia River Basin Fish and Wildlife Program, which directs about \$250 million of Bonneville Power Administration revenues annually to projects designed to protect and enhance fish and wildlife that have been affected by hydropower dams in the Columbia River Basin. By law, the Council revises the program at least every five years.

The latest revision began in May 2018 with a call for amendment recommendations. Based on those recommendations and input from Council members, in July 2019 the Council issued a draft 2020 Addendum in

two parts: [Part I on program performance](#), and [Part II on program implementation](#). The Council completed Part II first, in January 2020. The Council completed Part I in August, following a series of open, collaborative meetings with fish and wildlife agencies, tribes, and the public. The purpose of the 2020 Addendum is to identify near-term and evolving priorities in the program, and define how to evaluate program performance and then use what is learned to improve program implementation cost-effectively.

Also in 2020, the Council acted on the impacts of predation on juvenile salmon and steelhead by fish-eating birds, including Caspian terns, double-crested cormorants, and gulls, and predation on adult salmon, steelhead, and sturgeon by marine mammals. Researchers have blamed birds for more than half of the deaths of juvenile Upper Columbia steelhead, an ESA threatened species. In a [letter](#) to the U.S. Fish and Wildlife Service, the Council described the problem and expressed support for a proposed rule change that would allow more cormorants to be lethally removed from areas where they threaten fish in hatcheries and rivers. This year the Council also supported the implementation of

### Salmon and Steelhead Counted at Bonneville Dam



Source: Fish Passage Center, [www.fpc.org](http://www.fpc.org)



recently enacted federal legislation to remove more of the most aggressive sea lions from the river, by lethal means if necessary, from McNary Dam to the ocean and in tributaries, to reduce predation on adult salmon, steelhead, and other species including sturgeon and lamprey.

The Upper Columbia United Tribes continued to work on assessments of habitat suitability for reintroducing salmon and steelhead to the Columbia River Basin in the United States above Chief Joseph and Grand Coulee dams, in response to a phased reintroduction strategy in the Council's Columbia River Basin Fish and Wildlife Program. The assessments, reported in 2019, identified more than 1,500 miles of potential habitat in the mainstem Columbia and its tributaries above the dams, including the Spokane and San Poil rivers. This includes 1,161 tributary river miles for steelhead, 355 tributary miles for spring Chinook, and 53 miles of habitat in the mainstem river for summer/fall Chinook.

Finally, salmon and steelhead returns to the Columbia River in 2020 likely will be below the recent 10-year average, again, according to reports by the Idaho, Oregon, and Washington fish and wildlife. One bright spot, though, is sockeye, which return in three components – two to the upper Columbia and one to the Snake River in Idaho. The 2020 sockeye run is predicted to be about three times as large as the 2019 run. The states blamed the overall poor return this year on a downturn in ocean feeding conditions.

## Energy

In 2020 the Council continued work that began in 2019 on the next revision of its Northwest Power Plan. Like the fish and wildlife program, the Council revises the power plan at least every five years.

The 2021 Power Plan will include a 20-year electricity demand forecast and a portfolio of least-cost, reliable resources to meet the anticipated demand. In developing the plan, the Council's power staff considers a number of factors including evaluating recent trends in demand for power; accounting for uncertainty about weather,

including climate change impacts; forecasting fuel prices for power generation; and assessing changes in technology to determine which are likely to be developed to utility scale, and to what extent, during the 20-year life of the plan. Adding to the complexity is the question of how the region's hydropower system can adapt to the changing mix of generation as more renewable resources are added to the West Coast power supply.

In analyses that will be part of the 2021 Plan, the Council predicts that natural gas prices will remain low as the result of an anticipated abundant supply; overall demand for electricity in the Northwest will remain low over the next 20 years; and a little more than 5,000 average megawatts of energy efficiency should be achievable and cost effective in that time. The efficiency that has been achieved over the last nearly 40 years, almost 7,000 average megawatts, is influencing the anticipated low growth in demand. The increasing use of on-site solar generation at homes and businesses also is helping to slow the growth of demand for power.

## COVID-19

The Council has been watching trends in regional production of electricity and demand for power during the pandemic, as businesses and industries suspend operations and people work from home – those who were able to continue working. We've seen a sharp decline in emissions due to the economic slowdown, here in the Northwest and also globally, and reduced commercial and industrial power use. However, we don't expect the current changes to be permanent, and it is most likely emissions and power demand will rebound to previous levels once shutdowns are eased.



# Council Energy Overview

## The 2021 Northwest Power Plan

In 2020 the Council continued work that began in 2019 on the next revision of its Northwest Power Plan, which is implemented by the Bonneville Power Administration. The existing plan dates to 2016, and a draft of the [2021 Power Plan](#) is anticipated to be released for public comment in February 2021. The Council revises the plan and its companion Columbia River Basin Fish and Wildlife Program every five years. The Council completed the fish and wildlife program revision in August 2020.

The Bonneville Power Administration gets special attention in the Council's power planning, as the Northwest Power Act requires that the power plan include "a "forecast of power resources estimated by the Council to be required to meet the [Bonneville] Administrator's obligations and the portion of such obligations the Council determines can be met by resources in each of the priority categories." The priority categories are, in order, energy efficiency (conservation); cost-effective renewable resources; generating resources utilizing waste heat or generating resources of high fuel conversion efficiency; and all other resources. The Act also requires that the forecast "shall include the approximate amounts of power the Council recommends should be acquired by the [Bonneville] Administrator

on a long-term basis and may include, to the extent practicable, an estimate of the types of resources from which such power should be acquired."

Planning for the power system is challenging. In the every-five-years revision of the power plan, the Council forecasts how much electricity the region will need over the coming 20 years and then assigns generating and conservation (energy efficiency) resources to meet the anticipated demand. The Council's power planning staff evaluates recent trends in demand for power, accounting for uncertainty about weather, fuel prices, and changes in technology. As energy technologies from solar to electric vehicles have advanced, planning to ensure that the Northwest will have a reliable and affordable power supply has become increasingly complex. Adding to the complexity is the question of how the region's hydropower system can adapt to this changing mix of generation.

There are also a variety of state legislative regulations and initiatives, and city, community, and utility goals and resolutions to reduce greenhouse gas emissions, and states and utilities have different approaches to implementing and measuring them. Those regulations and goals, many of which specify what percentage of their states' power must comprise clean and/or renewable resources by a future date, are a dramatic departure from the traditional method of adding new energy resources to the power supply based on anticipated

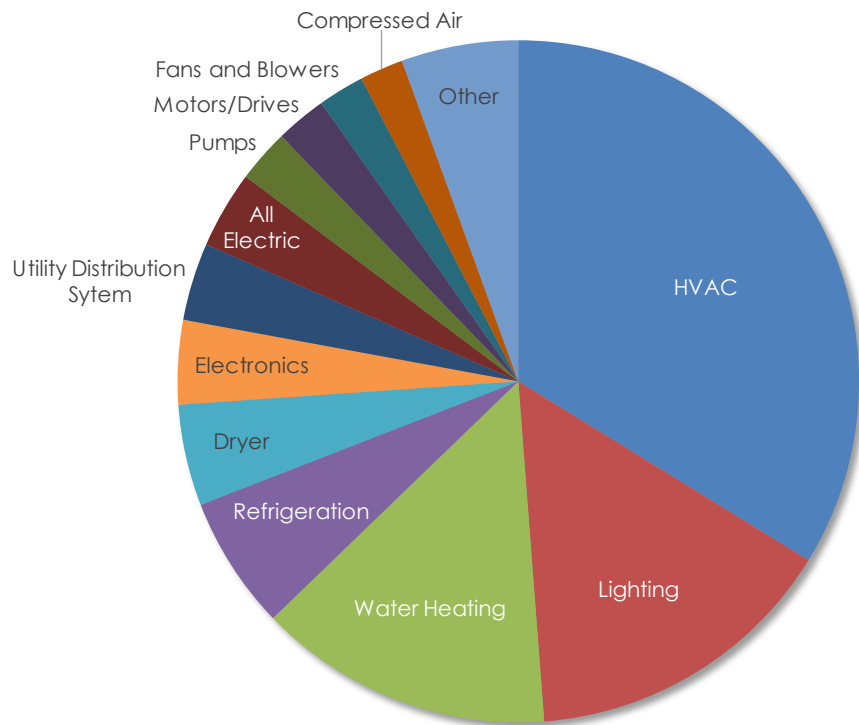


need (demand for power) and cost. The Council integrates these goals into expectations of how existing and future power plants will be operated and which future resources will be developed. These expectations include the best available scientific knowledge about the future impacts of climate-change, globally and in the Northwest.

The regional power system also includes a major interconnection that allows for power exports from the Northwest to the Southwest. California’s ambitious energy goal to rely entirely on clean energy sources by 2045 has resulted in the addition of a large amount of low-cost solar generation to the state’s power supply. When California solar energy suppliers sell their excess power into the West Coast wholesale market, prices decline with the additional supply, and this affects power exports to the Southwest from the Northwest. Thus, estimating the effects of California’s goals, policies, and power supply on the Northwest power system is an important consideration for the Council’s power plan.

### Assessing Future Energy Efficiency

In an [assessment](#) of the region’s energy efficiency potential, which will be used in the 2021 Power Plan’s resource optimization and scenario analysis, the Council has identified 5,048 average megawatts of potential energy efficiency measures over the next 20 years. Determining how much of that potential is cost-effective for the region will be a key element of the 2021 Power Plan. In terms of efficiency’s ability to reduce peaks in energy use during the winter and summer, the winter reduction is about 8,500 megawatts, and the summer reduction is 9,000.



The pie chart above shows where the Council identified future savings, with big efficiencies in heating and cooling systems, and more modest savings in lighting and water heating systems. New measures of focus for the 2021 Plan include: central air conditioning (HVAC) and optimized control for ductless heat pumps in residential homes; ventilation systems for dairy farms; fans and pumps for commercial buildings; and advanced motors for industries.

The supply curves will be used in the Council’s scenario analysis. The scenarios will test 1) the robustness of energy efficiency as coal plants retire in the coming years; 2) the effect of increased efficiency on efforts to decarbonize the power system; and 3) the Bonneville Power Administration’s portfolio of resources to meet its future demand for power.

### Natural Gas Price Forecast: Abundant Supplies, Low Cost for Now

The [price forecast](#) for natural gas is a strong indicator of future electricity prices and resource electricity developments, and is therefore a key input in the Council’s modeling for its 2021 Power Plan.

According to an analysis by Council staff, natural gas prices for the next three to five years are expected to remain low, thanks to an abundant supply from diverse sources. The long-term forecast is less certain. The low prices should keep natural gas consumption high, especially in the power sector, undercutting coal as retirements of coal-fired power plants continue across the West. Rapid growth in the export liquefied natural gas market is also forecast to continue as more facilities come online in the Southeastern United States and possibly in British Columbia. The United States is the largest overall producer of natural gas in the world, and is now the third largest exporter of liquefied natural gas behind Australia and Qatar.

### Accounting for Climate Change in the 2021 Power Plan

[Climate change](#) affects many aspects of the Council's analysis for the 2021 Power Plan. In its power plan [scenario analysis](#), the Council plans to use representative [climate scenarios](#) from the River Management Joint Operating Committee. The committee, which comprises the Bonneville Power Administration, U.S. Army Corps of Engineers, and Bureau of Reclamation, evaluates the risk and resiliency of the Federal Columbia River Power System. The Council is using the [committee's report](#) on how climate change could affect hydrology and water supplies in the basin.

Because winter temperatures are anticipated to be warmer, precipitation will fall mostly as rain rather than snow, increasing river flows in the winter and early spring. The lower snowpack will mean river flows will be lower in the summer. Warmer temperatures also mean lower demand for electricity to heat homes in the winter and more electricity use for air conditioning in the summer.

These changes, as well as state laws enacted to reduce greenhouse gas emissions that affect the development of coal and gas power generation, will be accounted for in the Council's scenario analysis.

### Gauging the Impact of Upstream Methane Leaks

As part of developing the 2021 Power Plan, the Council is [analyzing emissions from power plants](#) fueled by natural gas and coal. Technological advances in natural gas extraction, such as fracking and horizontal drilling, have enabled natural gas to eclipse coal as a fuel for electricity generation. Because of their lower costs, natural gas, energy efficiency, wind, and solar power have helped to replace coal-fired generation. This has led to a cleaner electrical grid in terms of CO<sub>2</sub> emissions.

However, the primary component of natural gas, methane, is a highly potent greenhouse gas. Methane that is released directly to the atmosphere is one of the biggest issues currently facing the natural gas and oil industry. Recent studies indicate that the natural gas supply system may be releasing more methane than previously thought through supply chain releases in the extraction and production process. Reducing these methane leaks is an important component for any decarbonization strategy.

In order to gauge the impact of methane leak reductions, a methodology to incorporate these emissions into the power planning models is required, as well as an estimate of the magnitude of the releases. A methodology was first presented to the Council's Natural Gas Advisory Committee (NGAC) in December 2019. Following feedback, the Council's power planning staff gathered data from additional methane emission studies, normalized the results, and proposed a new rate to the NGAC in May 2020. The recommended rate is a release rate of 1.37 percent for natural gas used in the region, which is in the low range of the normalized study estimates. Following discussion, Council members approved using this rate in its analysis. Details are available on the [Natural Gas Advisory Committee](#) webpage.

### Assessing Geothermal Energy Potential

The Pacific Northwest is literally a hotbed of [geothermal activity](#). Part of the so-called [Ring of Fire](#), an area of volcanoes and seismic activity that rings the North Pacific Ocean with hot spots deep within the Earth's



mantle, the region is a prime location for geothermal energy. According to the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy, geothermal resources are reservoirs of hot water that exist at varying temperatures and depths below the Earth's surface. Mile-or-more-deep wells can be drilled into underground reservoirs to tap steam and very hot water that can be brought to the surface for use in a variety of applications, including [electricity generation](#), direct use, and [heating and cooling](#). In the United States, most geothermal reservoirs are located in the western states.

The Council will be assessing geothermal as a resource option in the 2021 Power Plan. The region currently has 50 megawatts of installed geothermal capacity across four projects, one in Idaho and three in Oregon. Geothermal energy is a renewable, clean resource that can provide reliable, baseload power at low, predictable operating costs. But, it requires high upfront capital investment to explore sites that may or may not be productive. The cost of exploration and initial testing of a geothermal site can be 30 to 60 percent of the total cost of the project. Advances in drilling technology over the next decade should help unlock this resource's potential.

## Northwest Economy Continues to Grow While Using Less Energy

The Pacific Northwest economy grew at a faster rate than the nation's in 2018, according to a Council analysis reported in 2019. This follows a 10-year trend of the region's gross state product increasing at a faster rate than the national GDP. The region's population is also growing faster than the nation's. The Council collects this information as part of revising its Northwest Power Plan.

Warmer temperatures are affecting electricity load in the region. The 2018 winter was the warmest in the past 91 years, lowering heating requirements 9 percent. And as summers get hotter, the region's air conditioning use goes up, increasing cooling requirements by 23 percent. Still, improving energy efficiency and the region's changing economic mix — away from energy-intensive industries like aluminum smelting plants to technology companies — has meant that the region's economy continues to expand even as its electrical load stays low.



According to the analysis, regional electricity demand over the last 40 years has been steadily declining. Utility revenue collected in 2018 was down by \$200 million as residential monthly bills declined. The Northwest's residential electricity and natural gas rates are low compared to the rest of the country.

## BPA's Potential for Achieving Energy Efficiency and Demand Response

According to a [Council analysis](#), Bonneville's potential technical achievable savings are 1,937 average megawatts, with 1,500 costing less than \$100 per megawatt-hour. This represents 38 percent of the region's energy efficiency potential, which is more than 5,000 average megawatts. Bonneville's demand response potential is 1,438 megawatts during the summer and 1,099 megawatts during the winter. This represents about 40 percent of the region's demand response potential. The winter months represent a slightly higher percentage of the region's demand-response potential because of higher electrical heating saturation among Bonneville's utility customers.

## Lower Load Growth is Forecast Over the Next 30 Years

Demand for electricity in the Northwest is expected to remain low over the next 20 years, thanks in part to the growing use of on-site solar generation at homes and businesses. The impact of increasing energy efficiency from building codes and appliance standards is also helping to reduce demand for power. Electricity use may increase in the commercial and transportation economic sectors.

Current [forecasts of economic drivers](#) indicate lower growth, compared to the 2016 Power Plan's load forecast, in residential, commercial, and industrial sectors, with the agricultural sector showing a modest increase. The load forecast for 2050 is lower by about

5,800 average megawatts, comprising 3,500 average megawatts of energy savings from state and federal standards and 2,300 average megawatts from on-site solar generation, which is generation not produced by a utility (home rooftop solar, for example).

Meanwhile, solar installations at homes and businesses are predicted to grow. Since 2018, 326 megawatts of residential and business solar generation have been installed in the region; mostly in Oregon and Washington (90 percent) and primarily in the residential sector. Installations are expected to continue increasing well into the future. Washington is expected to lead the region in installations, with Oregon close behind. Also, adoption of electric vehicles is predicted to grow. By 2045, more than 500,000 electric passenger vehicles are expected to be sold annually, up from 27,296 in 2020.

## Update on Annual Greenhouse Emissions From the Power Sector

Once a year, the Council's power planning staff presents an [update](#) to the Council on the latest carbon emissions data, to give Council members the most up-to-date information on regional and national greenhouse gas emission levels and the trends behind those emissions. Data is available at three levels: regional, [western states](#), and national.

In the Northwest, annual carbon emissions from electricity generation have remained mostly flat over the last three years. With three average hydropower years in a row, the region has been able to rely on steady, low-carbon energy from hydropower, supplemented primarily with natural gas, as well as some coal, wind, and energy efficiency.

On average, since the early 2000s, the region has seen coal-fired generation decline while natural gas-fired generation has increased. Retirements of coal-fired power plants over the next few years have the potential to dramatically decrease future regional carbon emissions. Announced and planned retiring coal plants

account for 50 percent of historical emissions since 2000. However, actual emission reduction will depend on what resources replace those retiring plants.

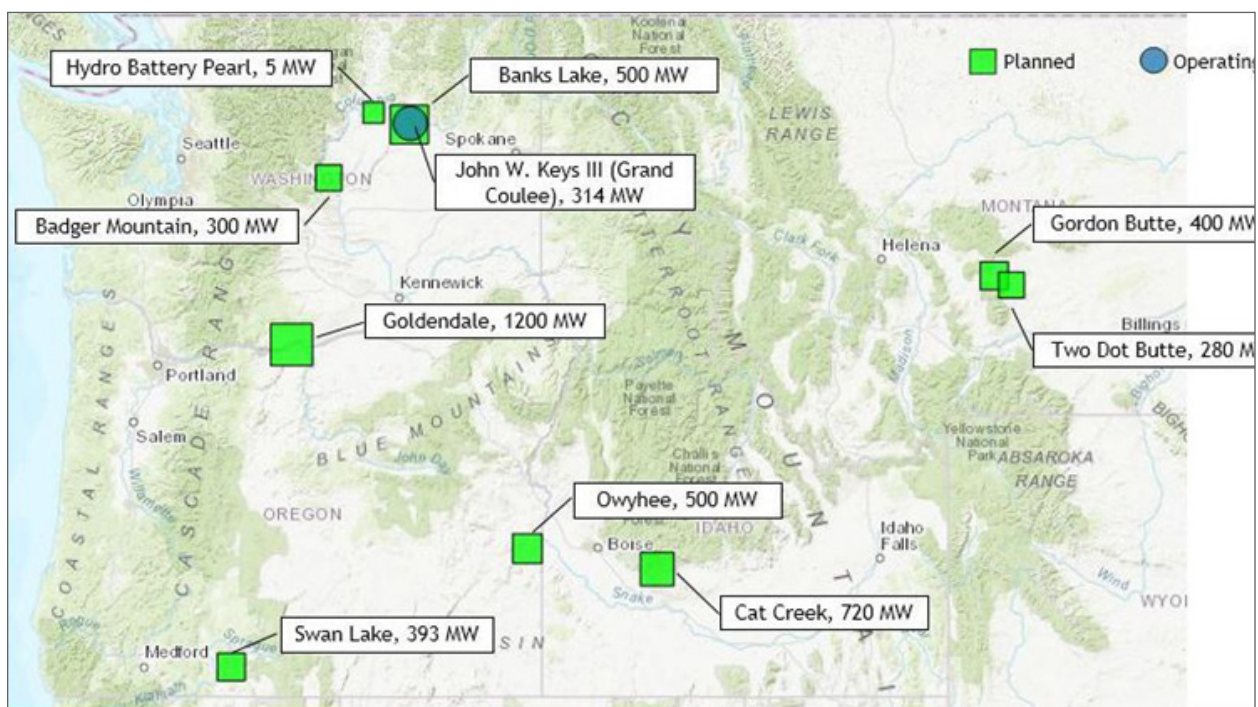
At the broader Western region level, coal units are decreasing over time, too. Various renewable portfolio standards, clean energy policies, and carbon regulation legislation have been adopted across the West. Washington state’s Clean Energy Transformation Act set a goal of ending coal-fired generation in the state by 2025, and Oregon has set a similar goal for 2029. These policies establish a framework for existing electricity resources and future resource development and will impact emissions in future years.

National emission rates follow a similar trend with a few key differences. Annual carbon emissions are trending down, while coal-fired generation decreases and natural gas increases as a fuel for power plants. However, the Pacific Northwest often has a lower greenhouse gas emission rate due to its abundant hydropower. This is highly dependent on the water year. A lower water year means the region will have to rely on other generating resources, especially coal and natural gas, which would cause higher emissions.

## Pumped Storage Hydropower: Good Potential But High Cost

A number of Northwest utilities are considering pumped storage hydropower in their integrated resource plans, and several projects have been proposed for development in the region. Pumped storage generates hydroelectricity for peak periods of demand by pumping water from a lower reservoir to a higher reservoir during low-demand periods and then releasing it during peak periods when electricity prices and demand are higher. The Council is assessing the potential for pumped storage by modeling its performance under different scenarios of demand for power and availability of resources. The characteristics of pumped storage — expected costs, operating and performance specifications, and developmental potential — are inputs into modeling and comparing resources.

Development of renewable resources, combined with announced retirements of coal-fired power plants and future compliance with clean energy standards, is driving the interest in pumped storage. One of its key benefits is that, like hydropower dams, operators can adjust its generation to the power grid’s load variations, so it can



Operating and planned pumped storage power plants in the Northwest



complement renewable generation's ups and downs. This flexible capacity is a critical need as more renewable generation is added to the power grid.

The downside to pumped storage is that it is extremely expensive to build. A typical project costs about \$2 billion and can take 10 years to license and construct. Still, developers have proposed nine projects in the Northwest, and two have Federal Energy Regulatory Commission permits: Swan Lake in Klamath County, Oregon and Gordon Butte in Meagher County, Montana. The only pumped storage project currently operating in the region is the 314-megawatt John W. Keyes III plant at Grand Coulee Dam.

## Solar Power Plus Battery Storage Could Help Meet Peak Loads

The Council closely tracks trends in energy advances and consumer use to improve its long-term electricity load forecast, which is used in the Council's regional power plan, currently under development. In our planning, we developed a [model simulation](#) to gauge the

impact of aggregating installations of behind-the-meter solar+battery systems, like those installed at homes and businesses, to smooth out the regional electricity load and, as a result, reduce peaks.

The results were interesting. For instance, on a typical spring day, the regional peak load might occur at around 8 a.m. and another slightly lower peak might occur around 8 p.m. In this case, the grid charges the battery in the very early morning hours when load is low and then dispatches electricity at the 8 a.m. hour to smooth out the morning peak. Once the sun is up and the photovoltaic system is generating, some of the electricity is diverted to the battery to be stored and used later that night during the 8 p.m. peak. The overall daily system load shape is flattened, which makes it easier to serve.

These systems are expensive now, but the costs for home battery storage are declining, and several manufacturers — Tesla Powerwall, Sonnen ecoLinx, and LG Chem RESU — offer battery storage systems that can be paired with photovoltaic panels.





## Council Opposes Selling BPA Electricity at Market Rates

Proposals by the Trump administration to force the Bonneville Power Administration to sell electricity at market rates rather than its cost of generation, as Bonneville has done for more than 70 years, and also sell the federal high-voltage transmission system, which Bonneville operates, not only would violate federal law but would dramatically increase the electricity bills of Northwest businesses, industries, and residential consumers, the Council believes.

The Council objected to the proposals in a March 2020 [letter to members](#) of the Northwest Congressional delegation. The cost of Bonneville's power is less than the average market price, sometimes far less, and the transmission system, at some 14,000 line miles, is the largest in the Northwest. In its letter, the Council refers to both proposals as "detrimental schemes for the economy of the Pacific Northwest."

The Council asserts that the administration's proposals would hurt Bonneville's utility customers, and by extension their customers, by increasing the costs of power, transmission, distribution from local utilities to homes and businesses, and other ancillary components that are currently included in the existing Bonneville rates. Most of Bonneville's customers are publicly owned, not-for-profit electric utilities, and many serve low-income, rural areas. Those customers would be particularly hard hit.

## Transforming the Way Utilities Do Business

At the Council's October 2019 meeting in Seattle, Debra Smith, general manager and CEO of Seattle City Light, [presented an overview](#) of the utility's strategic priorities in a changing and challenging energy environment. Seattle City Light, with more than 900,000 customers, is the 10th-largest public utility in the country. One of the biggest challenges, she said, is how to monetize energy in a highly efficient electricity future. As appliances and devices improve their efficiency

and web-based systems optimize energy use, utilities face the problem of declining sales while still needing to pay for the costs of grid infrastructure.

Smith said the utility is working to help customers meet their energy needs in whatever way they choose while ensuring affordability. She noted four pilot rate plans under development that are focused on helping low-income, residential time-of-day, commercial charging, and industrial demand response customers. Roll out for the new opt-in programs is expected in 2021.

The utility product in the future likely will be completely different than today, she said. For example, utilities may provide batteries to homeowners or neighborhoods for charging devices including electric vehicles and providing back-up power when needed. New services and technologies like this have the potential to create new revenue streams for utilities, she said.



# Council Fish & Wildlife Overview

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## Revising the Columbia River Basin Fish and Wildlife Program

The geographic scope of the Council's [Columbia River Basin Fish and Wildlife Program](#) is vast, from the Pacific Ocean to the mountains and plains of eastern Washington, northern and northeastern Oregon, most of Idaho, and a portion of western Montana. After nearly 40 years of development and implementation, the program has increased protection of fish and wildlife and mitigated the harmful effects of the Columbia River Basin hydropower system, even as significant challenges remain. The program is implemented by the Bonneville Power Administration and other federal agencies in partnership with the state and federal fish and wildlife agencies and Columbia River Basin tribes.

The Council periodically reviews and revises the program, most recently in a process that began in May 2018 when the Council solicited recommendations from the region's state and federal fish and wildlife agencies, Indian tribes, and others, as required by the Northwest Power Act of 1980, the federal law that authorized the Council and directs its work. In July 2019 the Council issued a draft 2020 Addendum in two parts: [Part I on program performance](#), and [Part II on program implementation](#). Based on public comments on the draft,

the Council decided to proceed with Part II and take more time on Part I to allow the Council to work with the fish and wildlife agencies and tribes in a focused process to refine and revise goals, objectives, and strategy performance indicators in the program. Accordingly, the Council adopted Part II in January and continued to work on Part I, which includes a reorganization and elaboration of the program's goals and objectives, and also a preliminary set of strategy performance indicators to track and report on progress. Following a series of public meetings, the issuance of a draft document, and public comments on the draft, the Council approved Part 1 in August and later, findings on how the Council used the recommendations.

The revised program includes a section on assessing, monitoring, and reporting program performance, followed by a comprehensive set of references that describe the source material for the objectives and indicators, some of which came from the 2019-2020 work of NOAA Fisheries' Marine Fisheries Advisory Committee. Emerging priorities identified in the program include climate change impacts; mitigation for losses of anadromous fish in areas where dams block fish passage; improving our understanding of impacts of the ocean environment; operations of Libby and Hungry Horse dams in Montana to benefit both resident fish in Northwestern Montana and Northern Idaho



and anadromous fish downriver; and impacts of the Columbia River estuary environment.

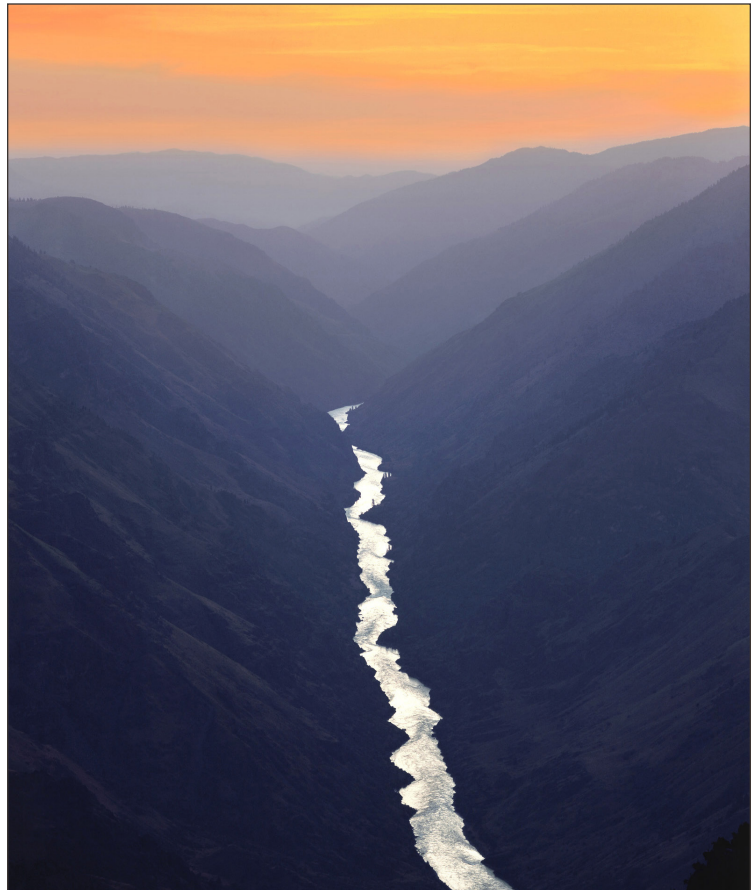
Just a few of the accomplishments from implementation of the 2014 Fish and Wildlife Program include:

- Improved 309,281 acres of habitat from 2014-2018 through watershed and stream restoration, planting, removing invasive species, and restoring wetlands and floodplains.
- Supported conservation hatchery activities that are protecting endangered sockeye in the Snake River; spring Chinook in the Upper Grande Ronde, the Lostine River, Catherine Creek and the Clearwater River; spring/summer Chinook in Johnson Creek; and Snake River fall Chinook.
- Improved water management, flow, and passage to protect and increase species survival through the mainstem Columbia and Snake rivers and in the reservoirs behind storage dams.
- Supported and engaged in regional collaborative efforts to reduce the impacts of marine mammals on salmon, steelhead, sturgeon, and lamprey, and also predation by Northern Pikeminnow in the Columbia River and Northern Pike in Lake Roosevelt and tributary rivers above Grand Coulee Dam.
- Established new settlement agreements with the State of Idaho for wildlife mitigation and to improve riparian and floodplain habitat.
- Developed and implemented a plan to ensure the longevity and integrity of the program's past investments in fish hatcheries, fish diversion screens, and habitat.
- Realized \$3.36 million in savings through a collaborative cost-savings workgroup and utilized \$2.48

million of the savings to fund new or expanded mitigation initiatives.

## Maintaining Fish Screens And Hatcheries

At its June 2020 meeting, the Council approved \$104,500 for non-recurring maintenance at fish hatcheries funded through the Council's fish and wildlife program, and \$397,000 for non-recurring maintenance to fish-diversion screens maintained by state fish and wildlife agencies that keep juvenile fish out of water intakes, such as irrigation diversions. The maintenance is considered non-recurring because it addresses repair and replacement needs that are not addressed through the annual fish-screening project budget. The funding, totaling \$501,500, comes from the Council's Asset Management Placeholder, which



is intended to ensure the integrity and longevity of investments the Council has made over the years for the benefit of fish and wildlife.

In January, the Asset Management Subcommittee, which oversees the placeholder and includes representatives of the Council and the Bonneville Power Administration, solicited proposals and received a total of 14 projects needing maintenance. Managers receiving funding for work at hatcheries include the Confederated Tribes of the Colville Reservation; Montana Department of Fish, Wildlife, and Parks; and the Idaho Department of Fish and Game (IDFG). Managers receiving funding for screen repairs include the Washington, Oregon, and Idaho fish and wildlife departments.

## Hanford Reach Flow Protections For Fall Chinook Are Working

A program to manage Columbia River flows to protect Fall Chinook salmon that spawn in the Hanford Reach of central Washington is helping keep that population, also known as upriver brights, productive, healthy, and harvestable. It wasn't always that way. In fact, before agreements in 1988 and 2004, fluctuating river levels caused by hydropower operations varied widely, ranging from 36,000 to 150,000 cubic feet per second. This caused Fall Chinook egg nests, called redds, to become exposed and juvenile salmon to be stranded along the margins of the shoreline.

Studies conducted in the early and mid-1980s, ultimately led to the 1988 Vernita Bar Agreement, which provided specific protection for spawning adults and incubating embryos. The [2004 agreement](#) added protections for juveniles emerging from the gravel and rearing along the margins of the shoreline, thereby providing protections for all freshwater life stages of the fish. The parties that worked to develop the program comprised a diverse group, including representatives from the utilities (Bonneville Power Administration, Chelan PUD, and Douglas PUD), state and federal fish and wildlife agencies (NOAA-Fisheries, WDFW and USFWS) and tribal representatives from the Yakama

Nation and Colville Confederated Tribes. Other participating entities included the Columbia River Intertribal Fish Commission, Alaska Department of Game and Fish, and the Wanapum People. A total of 87,651 Fall Chinook returned to the Reach in 2019, and the estimate for 2020 is 92,700. The strong population supports fisheries in Washington and in the ocean off Washington, British Columbia, and Alaska.

The Council's 2014 Columbia River Basin Fish and Wildlife Program supports the Hanford Reach protections and asks that the parties to the agreement report to the Council periodically to assure flow measures continue to be effective in protecting fall Chinook redds and juveniles from flow and river elevation fluctuations.

## Council Supports U.S. Fish Rule Change Regarding Cormorants

Fish-eating birds, including Caspian terns, double-crested cormorants, and gulls, are killing half, or more, of the juvenile Upper Columbia steelhead, an ESA threatened species, during their annual outmigration down the Columbia River to the Pacific Ocean.

In a [letter to the U.S. Fish and Wildlife Service](#), the Council called attention the problem. At the time the Service was considering a rule change to allow more cormorants to be lethally removed from areas where they threaten fish in hatcheries and rivers.

The predation by birds is occurring over more than 500 miles of the river, from central Washington state to the ocean, affecting all species of juvenile salmonids (some more than others depending on the length and timing of their migration), and coincides with the birds' breeding season. Smolts being consumed by these avian predators include at least five Endangered Species Act (ESA)-listed species: Snake River sockeye, Upper Columbia Steelhead and Spring Chinook, and Snake River Steelhead and Spring/Summer Chinook.



## Sea Lion Predation on Salmon and Steelhead Increases

Steller sea lions are arriving earlier in the year at Bonneville Dam and leaving later to the point that some live at the dam nearly all year. Even though they consumed fewer salmon and steelhead overall in the spring of 2019 than they did in 2018, they took a large toll on winter steelhead, an estimated 13.1 percent of the run from November 2018 through March 2019, the U.S. Army Corps of Engineers reported in its 2019 annual report on sea lion predation in the tailrace of the dam. The [report](#), published in April 2020, is posted on the Fish Passage Operations and Maintenance Pinniped Task Group [website](#).

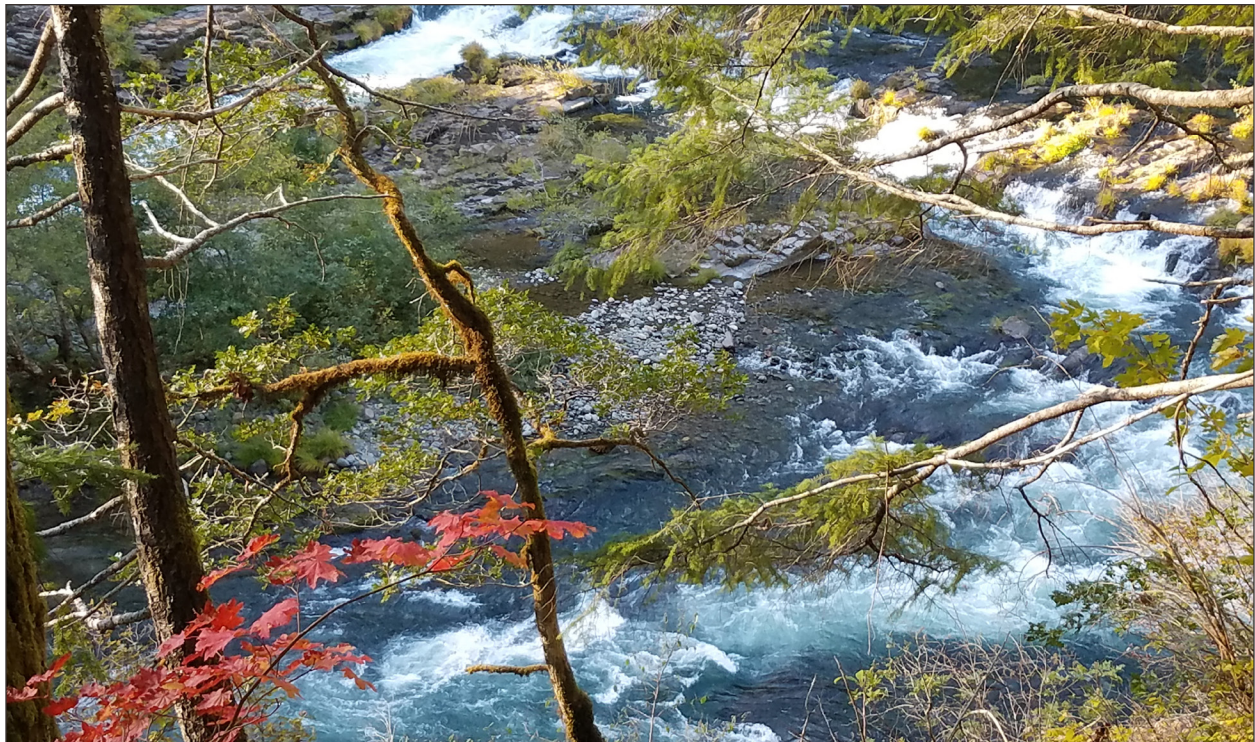
The Council supported Congressional legislation to remove more of the most aggressive sea lions from the river, from McNary Dam to the ocean and in tributaries in that reach of the river. That new statutory authority was implemented by NOAA in August 2020.

Sea lion predation on Endangered Species Act-listed species has been documented, including Willamette River Winter Steelhead, Columbia River Winter Steelhead, Upper Columbia Spring Chinook, Snake River Sockeye, and some Chum and Coho salmon. Pacific Lamprey returning from the ocean also are prey for sea lions, as are White Sturgeon. Sturgeon were particularly hard hit by sea lions in the fall and winter of 2018/19, according to the Corps' report.

## Council's Northern Pike Webtool Explains Invasive Predator

Northern Pike is an aggressive, invasive fish that threatens resident fish in Lake Roosevelt, the reservoir impounded by Grand Coulee Dam. If this predator species were to spread downriver into salmon and steelhead habitat, the result would be catastrophic.

In Fiscal Year 2020, the Council developed a [web tool](#) to explain the problem and what people can do to help prevent the spread of Northern Pike.



## Science Panel Says CSS Should Consider Climate Change

In a [2019 review](#), the Independent Scientific Advisory Board (ISAB) concludes that the Comparative Survival Study (CSS) needs additional analyses to better reflect the uncertainty of climate change and other future impacts on Columbia and Snake River hydropower operations and survival of salmon and steelhead. The annual CSS, coordinated by the Fish Passage Center, is an important study that helps regional decision-makers answer difficult ecological questions, such as the effects of the current river environment and dam operations on the survival of salmon and steelhead.

The 11-member ISAB, whose members are nominated by National Academy of Sciences, serves the National Marine Fisheries Service (NOAA Fisheries), Columbia River Indian Tribes, and the Council by providing independent scientific advice and recommendations regarding scientific issues that relate to the respective agencies' fish and wildlife programs.

The ISAB regularly reviews analytical products of the Fish Passage Center, including the annual CSS reports. The current review focused on [Chapter 2](#) of the 2019 annual report, which assesses six alternative dam-operating and river flow scenarios presented in the draft [Columbia River System Operations Environmental Impact Statement](#), (DEIS) issued in February by the Bonneville Power Administration, U.S. Army Corps of Engineers, and Bureau of Reclamation.

The ISAB scientists commented that the models and historical flow data used by the CSS, while valuable, did not evaluate potential impacts of climate change on future flows and environmental conditions or capture variation in ocean survival of salmon, a caution also noted by the CSS authors. The CSS report could be improved, however, with a deeper analysis of why the models produced the results they did, according to the ISAB report.

## Opening Estuary Habitat Is Helping Juvenile Fish Migration

In March 2020, representatives of the Bonneville Power Administration and the U.S. Army Corps of Engineers discussed with the Council progress to date in improving habitat in the Columbia River estuary. This includes opening access from the mainstem river to adjacent floodplains that once were accessible to juvenile fish migrating to the ocean but were rendered inaccessible by dikes and water control structures as the land was reclaimed for agriculture. More than 14,000 acres of floodplain have been opened, including 500 acres in 2019 alone.

Opening access to the river and engineering new habitat by digging channels and planting vegetation is only part of the work. Monitoring the results is equally important. A Corps representative told the Council that it is evident from monitoring the completed projects that fish from the interior Columbia basin use the restored floodplains for resting and feeding, and that the floodplains have become a source of prey fish for larger species in the river. Alternative prey can reduce predation losses of juvenile salmon and steelhead. This is something state and federal fisheries biologists have been hoping to better understand, so that the role of the estuary is better understood as part of the overall effort to mitigate the impacts of hydropower dams in the Columbia basin.

The projects are organized under the Columbia Estuary Ecosystem Restoration Program, which is a Joint effort of the Bonneville Power Administration and Corps of Engineers, in cooperation with NOAA Fisheries.

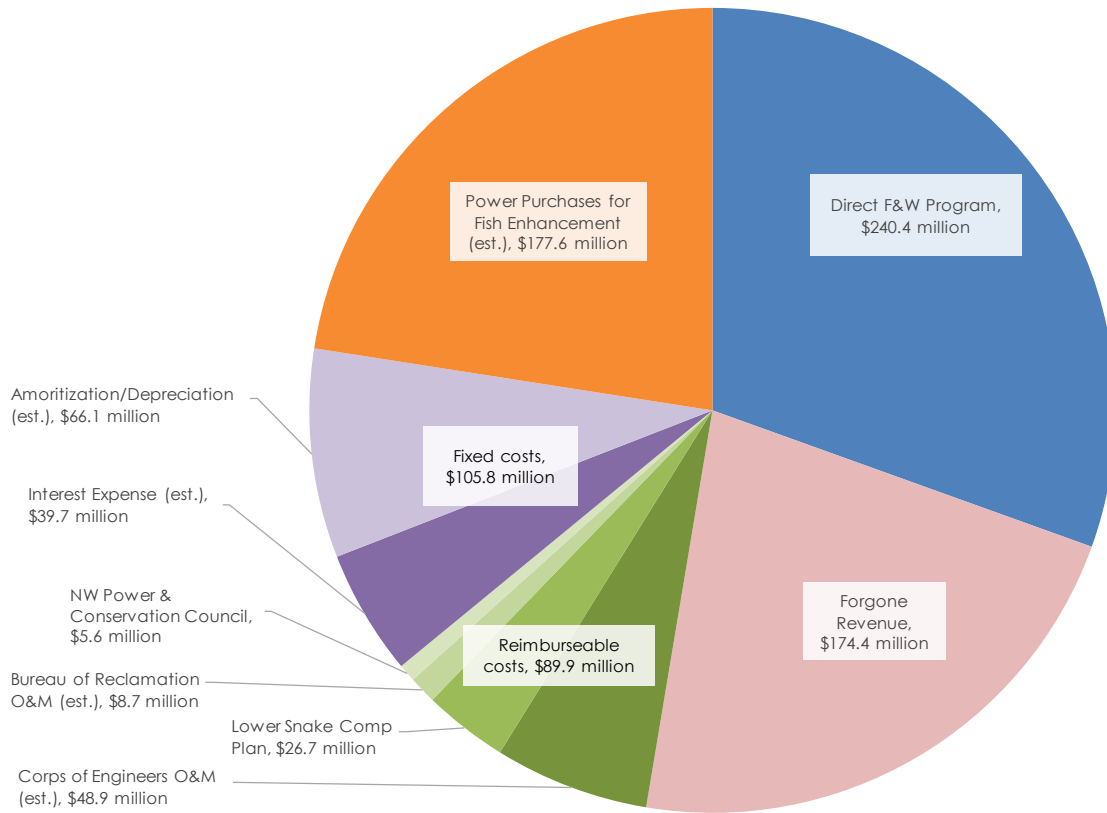




## Bonneville Power Administration 2019 Fish and Wildlife Costs

Fiscal Year 2019 Bonneville Power Administration costs to implement the Council’s fish and wildlife program, from Council Document [2020-2](#).

Total of \$788.1 million does not reflect \$77.9 million in obligations to capital projects for fish and wildlife projects, software development, and structures at dams, or \$98.2 million federal credits Bonneville receives from the U.S. Treasury

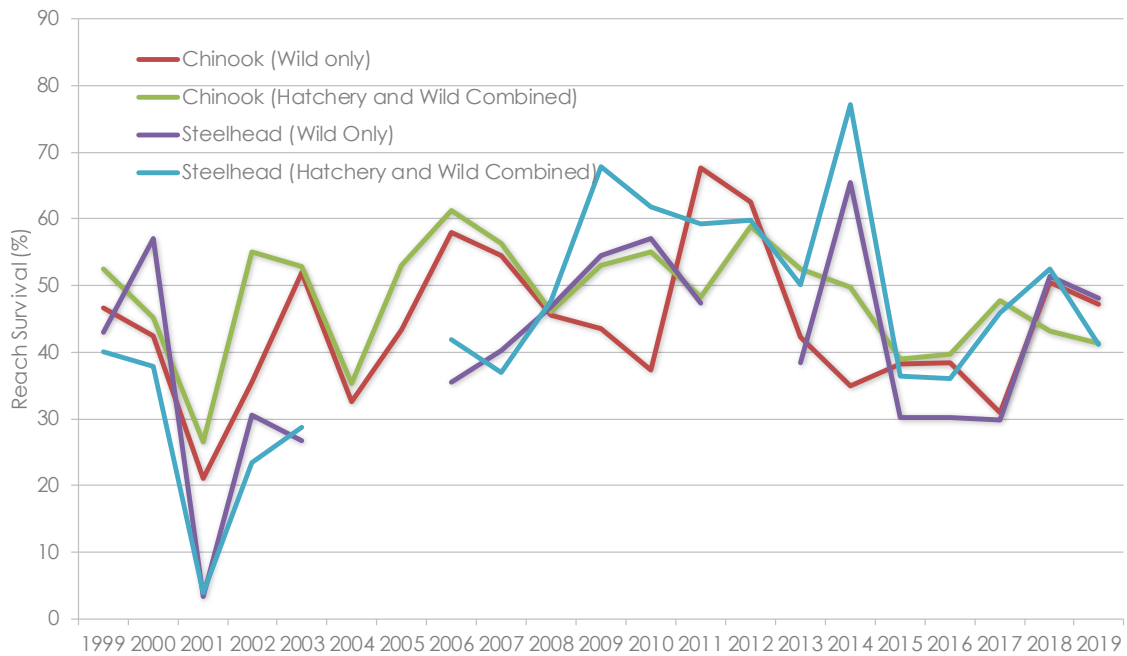


This information has been made publicly available by BPA in January 2020. The figures shown are consistent with audited actuals that contain Agency approved financial information, except for forgone revenues and power purchases which are estimates and do not contain Agency approved financial information.

## Survival Trends for Juvenile Salmon and Steelhead

Charts on the next two pages show trends in survival of juvenile fish through the hydrosystem and abundance by species counted at Bonneville Dam.

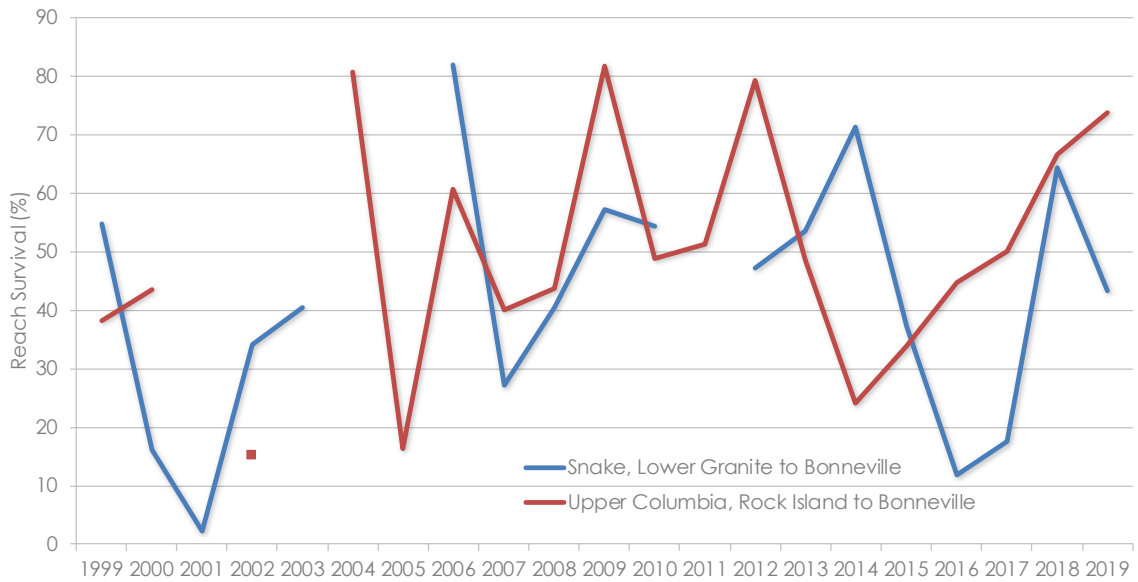
### Reach Survival of Juvenile Snake River Chinook and Steelhead, Lower Granite to Bonneville Dams



### Survival of Juvenile Upper Columbia Hatchery Chinook and Steelhead, McNary to Bonneville Dams

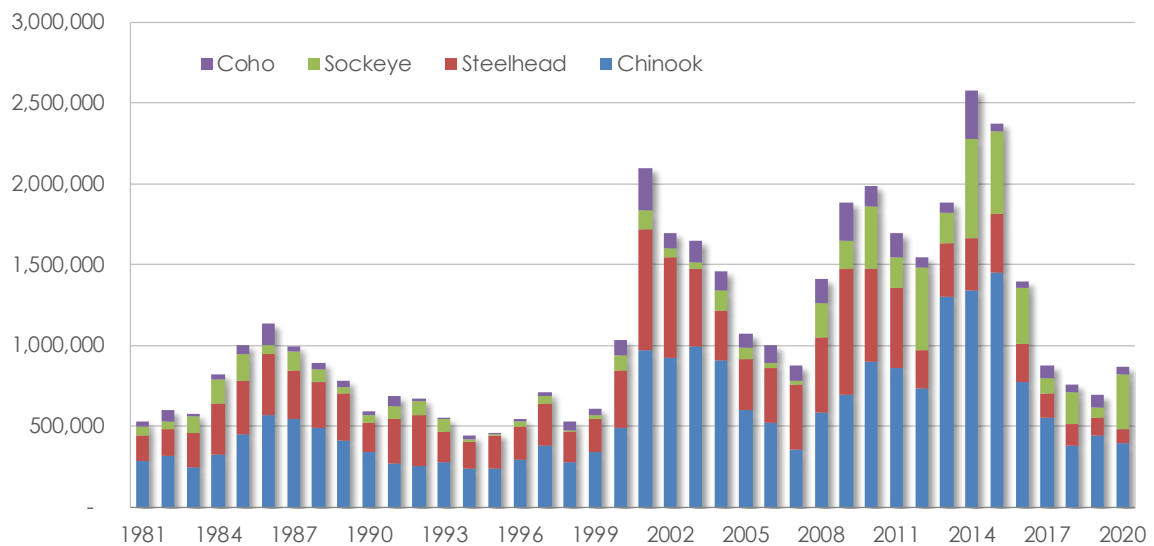


### Survival of Juvenile Snake and Upper Columbia Sockeye, Lower Granite and Rock Island Dams to Bonneville Dam



Source for this and previous 2 charts: NOAA Fisheries [Survival Estimates for the Passage of Spring-Migrating Juvenile Salmonids through Snake and Columbia River Dams and Reservoirs](#)

### Salmon and Steelhead Counted at Bonneville Dam



Source: Fish Passage Center, [www.fpc.org](http://www.fpc.org)

# Public Affairs Overview

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## Outreach, Information, and Communication

The Northwest Power Act directs the Council to provide for the participation and consultation of the Pacific Northwest states, tribes, local governments, consumers, electricity customers, users of the Columbia River System, and the public at large in developing regional plans and programs related to energy efficiency, renewable energy resources, other energy resources, and protecting, mitigating, and enhancing fish and wildlife resources. The Council's Public Affairs Division has the primary responsibility to implement this portion of the Act.

The Division uses a variety of communication tools to perform its mission, including printed and electronic publications, the Council's website, social media platforms, video, public meetings, and press releases that are posted as news items on the website and then communicated to the news media and other interested parties via email and social media.

The Council's website, [www.nwcouncil.org](http://www.nwcouncil.org), functions as the hub of its outreach efforts and public information strategy. In 2017 the Council completed an update of the website, giving it a new look and making it faster

to load and easier to use. The website contains myriad documents, publications, databases, and other forms of information. Included on the site are the current versions of the [Northwest Power Plan](#), the 2014 [Columbia River Basin Fish and Wildlife Program](#) and [2020 Program Addendum](#), as well as press releases, Council white papers, official public comment on Council documents, PowerPoint presentations, videos, Council newsletters, photos, and links to the Council's social media platforms.

Social media are used increasingly by the Council to communicate with the public. These include Facebook, Twitter, LinkedIn, Instagram, Vimeo, and Flickr accounts, all of which are available on the Council's [News page](#).

The monthly [Council Spotlight](#) newsletter includes news about Council meetings and links to posts on the website.

The Public Affairs Division also has the responsibility of advancing the Council's mission and accomplishments with members of Congress and their staffs. To assist this work, the Council conducts an annual field trip for staff members of the Northwest congressional delegation during the August Congressional recess. This year because of the pandemic, the usual trip was canceled





except in Idaho, where the Idaho Council members conducted a tour for staff of the Idaho delegation. The Council has been conducting these informational trips for Congressional staff since 2008.

## Canadian Relations

The Columbia River and several of its major tributaries begin in Canada and flow across the international border. Consistent with direction in the Northwest Power Act to treat the entire Columbia River as one system for planning purposes, the Council maintains regular contact with power planning entities in British Columbia.

The Columbia Basin Trust (CBT), a Crown corporation of the province, is the Council's closest counterpart agency in the Canadian portion of the Columbia River Basin. Since 1996, Council members and staff have communicated with and met annually with the Trust Board of Directors to discuss Columbia River issues of mutual interest. In 2000, the two agencies formalized their relationship in a memorandum of understanding and designated official liaisons. The memorandum was revised in 2011.

The Council and Trust co-sponsored their fifth major international conference on the Columbia River in September 2019. The conference, in Kimberley, BC, had nearly 300 participants. See the [post-conference report](#).

## Council Meetings

All Council meetings are available in the [Meetings](#) section of our website.

## Media Mentions of the Council in 2020

- **NWPCC says planned coal retirements may make power supply inadequate by 2021**  
*Power Engineering*, [October 2, 2019](#)
- **Bonneville Power dynasty: No longer a 'no-brainer'**  
*E&E News*, [November 27, 2019](#)
- **Opinion: 40 years after creation, Northwest Power and Conservation Council at a crossroads**  
*The Oregonian/Oregon Live*, [December 15, 2019](#)
- **Will there be enough electricity after coal plants shut down?**  
*KGW TV*, Portland, [December 17, 2019](#)
- **Reliable energy critical for NWE's Montana customers**  
*Bozeman Daily Chronicle*, [January 10, 2020](#)
- **Electric cars will challenge state power grids**  
*Washington Post*, [January 27, 2020](#)
- **Looming power shortage is 'killer argument' against dam-breaching | Guest Opinion**  
*Tri-City Herald*, [February 10, 2020](#)
- **For This Tribe, Saving a River Means Saving The Sturgeon**  
*New York Times*, [June 2, 2020](#)
- **Northwest Power and Conservation Council: Gauging the Impact of Upstream Methane Leaks**  
*Market Screener*, [June 29, 2020](#)
- **Pacific Northwest looks to avoid California-style blackouts through more regional coordination**  
*Utility Dive*, [August 24, 2020](#)

# Administrative Overview

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## Budget Overview

The funding necessary for the Council to carry out its activities and responsibilities under the Northwest Power Act is provided by the Bonneville Power Administration based on the Council's adopted annual budget. Bonneville is a self-financing power marketing authority under the U.S. Department of Energy. The Northwest Power Act establishes a funding mechanism for the Council based on an estimate of Bonneville's forecasted, annual firm-power sales. Funding for the Council does not come from annual federal appropriations or from state governments.

## Budgets for Fiscal Years 2020 (Revised) and 2021

The Council's Fiscal Year 2021 revised budget of \$ 11,744,000 is a reduction of \$153,000 from the previously submitted Fiscal Year 2021 budget request of \$11,897,000. A decrease in travel and contracting is projected while the Council makes increasing use of technology to hold virtual meetings accessible to the public while minimizing travel expenditures for staff and meeting participants. The proposed budget for Fiscal Year 2022 is \$11,942,000.

The Council is aware of economic challenges facing the four-state region and the need to maintain healthy financial conditions for Bonneville. The Council will continue to carry out its statutory responsibilities in a fiscally prudent manner by identifying efficiencies in operations and administration. Cost-containment measures for travel, contracts, and services and supplies have also been incorporated in the budget. The Council will also continue to prioritize workload and resources to ensure it can fulfill its responsibilities while also being responsive to new requests for technical assistance and/or analyses that the Council finds essential to undertake.

## Budget Development

The Council projects workloads and resource requirements two years in advance with some opportunity for budget revisions occurring prior to the beginning of each fiscal year. During each budget cycle, the Council manages overall expenditures to the most cost-effective level. Unanticipated events may require reallocation of funds previously budgeted for other purposes. For example, unplanned staffing changes or regulatory changes affecting regional energy or Columbia River Basin fish and wildlife may cause the Council to reallocate resources to prioritize work on emerging issues affecting or affected by the Council's



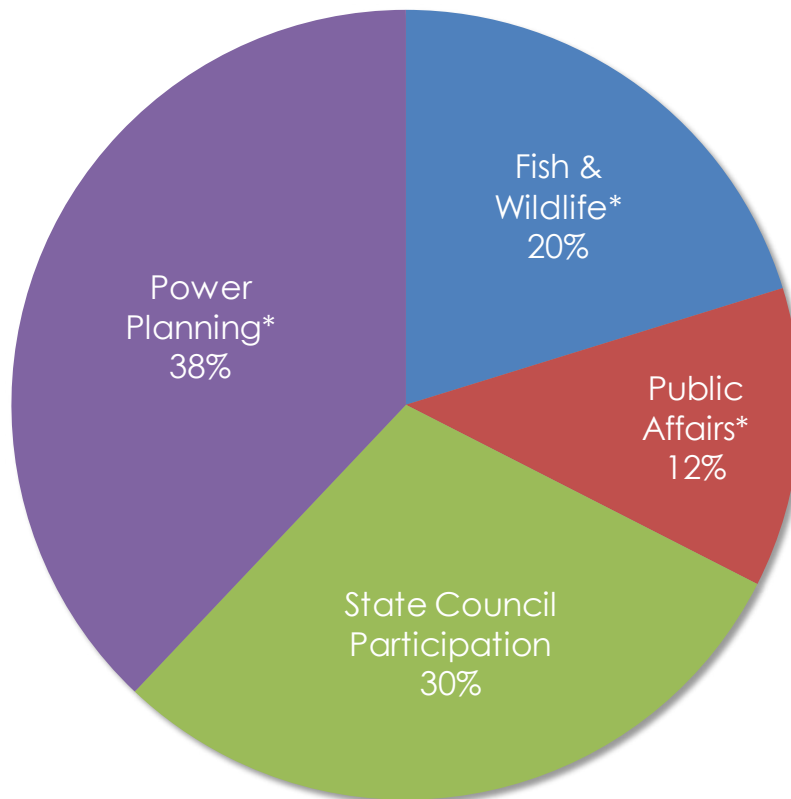
statutory responsibilities. Since 1997, the Council has negotiated annual budget ceilings with Bonneville that cover specific Bonneville rate periods. These negotiated agreements incorporate various budgetary constraints that have helped to hold Council budget growth to an average of less than 3 percent annually over the last 23 years (1998-2021).

## Background

### The Northwest Power Act

The Council was authorized by Congress in 1980 in the Pacific Northwest Electric Power Planning and Conservation Act (the Power Act), giving the states of Idaho, Montana, Oregon, and Washington a greater voice in how we plan our energy future and protect our fish and wildlife resources. The Act gives the four Northwest states a formal role in making decisions about the allocation of new energy resources for the region.

Budget by Function for FY 2021: \$11,893,000



\* Includes central office legal, fiscal, executive and administrative services

In the late 1960s and early 1970s, the years leading up to the congressional debate over the Act, the Bonneville Power Administration and many of the region's utilities were concerned that the region's expected growth would outstrip the power system's ability to meet electricity demand. As a result, Northwest utilities made decisions to build a number of new energy plants, including five nuclear power plants in the state of Washington. When the Act was passed in late 1980, many in the region had come to realize that those earlier decisions, based in part on inaccurate electricity demand forecasts, were a disastrous mistake. Only one of the plants, the currently operating Columbia Generating Station, formerly known as Washington Nuclear Plant 2, was completed. Due to exorbitant cost overruns, the other four plants were abandoned or mothballed prior to completion. Two of the unfinished plants were responsible for one of the largest bond defaults in the history of the nation, while the financing for the other three plants was backed by the Bonneville Power Administration. Even today, 37 years after the Northwest Power Act was enacted, Bonneville pays hundreds of millions of dollars a year on debt service for two of the unfinished nuclear plants, plus the one that was completed.

Congress concluded that an independent agency, controlled by the states and without a vested interest in selling electricity, should be responsible for forecasting the region's electricity load growth and helping determine which generating and conservation resources should be built. The Council does that in the Northwest Power Plan, which includes a component Columbia River Basin Fish and Wildlife Program to mitigate the impact of hydropower dams on fish and wildlife. The Act directs the Council to review the plan at least every five years. The Act also directs the Council to ensure widespread public involvement in formulating regional fish and wildlife and energy policies.

## **The Northwest Power and Conservation Council**

The governors of Idaho, Montana, Oregon, and Washington each appoint two members to the Council. The eight-member Council sets policy and provides overall leadership for Council activities.

The Council's work is performed, depending on the tasks, by the Council's professional staff (including staff in a central office in Portland and in each state), by consultants under contract, or by public agencies and Indian tribes under intergovernmental agreements. The Council's executive director is responsible for coordinating with the Council, supervising the central office staff, administering contracts, and overseeing the day-to-day operations of the Council. The Council approves major contracts and the overall work plan. The Council has 59 employees.

The central staff is organized into five divisions: Power Planning; Fish and Wildlife; Public Affairs; Legal; and Administrative. Professional staff in each state provide technical review and assistance to Council members in evaluating matters before the Council. State staff also participate in designing and developing public-involvement programs that focus on the implementation of the power plan and fish and wildlife program in their particular states. This support is provided through existing state agencies or by individuals directly under Council member direction.

The Council, known until 2003 as the Northwest Power Planning Council, is an interstate compact agency authorized by Congress in the 1980 Power Act and created by the legislatures of Idaho, Montana, Oregon, and Washington. The Council's first meeting was in April 1981.

The Northwest Power Act gives the Council three distinct responsibilities: 1) to assure the region an adequate, efficient, economical, and reliable electric power supply; 2) to prepare a program to protect, mitigate, and enhance fish and wildlife, and related spawning grounds and habitat, of the Columbia River Basin affected by the development and operation of any hydroelectric project on the Columbia River and its tributaries; and 3) to inform the Pacific Northwest public regarding these issues and involve them in decision-making. This annual report is organized around the Council's key responsibilities and five divisions.

The Power Act created a special relationship between the Council and the federal agencies that regulate and operate dams in the Columbia River Basin and



sell the electricity that is generated. The administrator of the Bonneville Power Administration, the federal power marketing agency that sells the output of the Federal Columbia River Power System (a system that includes 29 federal dams within the basin and two outside (in southern Oregon), and one non-federal nuclear power plant), is required to make decisions in a manner consistent with the Council's Northwest Power Plan and its Columbia River Basin Fish and Wildlife Program. Other federal agencies with responsibilities for federal and non-federal dams in the Columbia River Basin (the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and Federal Energy Regulatory Commission) are required to take the Council's power plan and fish and wildlife program into account "at every relevant stage of decision-making to the fullest extent practicable," in the words of the Act.

Despite its relationship to federal agencies, the Council is not a federal agency and its employees are not federal employees. The eight-member Council consists of two members from each state, appointed by their respective governors. The Council headquarters are in Portland.

## **The Columbia River Basin Fish and Wildlife Program**

A key element of the Council's planning efforts is developing and periodically revising (by law, at least every five years) a program to protect, mitigate, and enhance fish and wildlife, and related spawning grounds and habitat, of the Columbia River Basin that have been affected by hydropower dams – both federal and those licensed by the Federal Energy Regulatory Commission. Consistent with direction in the Power Act, the Council first created and subsequently has revised, the fish and wildlife program, followed by the initial creation and subsequent revisions of the Northwest Power Plan (see below). That sequence is because the Act requires the Council to include measures in the fish and wildlife program to improve survival of anadromous fish – those that are born in freshwater, spend most of their lives in the ocean, and then return to freshwater to spawn – at and between dams on the Columbia and Snake rivers. Because these measures can take water away from hydropower generation – by spilling over dams to improve fish-passage survival, for example – the Council anticipates that hydropower generation could be reduced



as a result of the program and accounts for this potential loss with cost-effective resources in the power plan. The highest-priority resource in the Power Act is energy efficiency, also called energy conservation.

The Act directs the Council to develop its program and make periodic major revisions by first requesting recommendations from the region's federal and state fish and wildlife agencies, Indian tribes within the basin, and other interested parties. The Council also takes comment from the designated entities and the public on those recommendations.

The Council then issues a draft amended program and initiates a public comment period on the recommendations and proposed program amendments that includes extensive written comments, public hearings in each of the four states, and consultations with interested parties. After closing the comment period and following a review and deliberation period, the Council adopts the revised program. The Council develops its final program on the basis of the amendment recommendations, information submitted in support of the recommendations, views and information obtained through public comment and participation, and consultation with the fish and wildlife agencies, tribes, Bonneville customers, and others. The program amendments are not concluded until the Council adopts written findings as part of the program explaining its basis for adopting or not adopting program amendment recommendations.

The program is implemented through projects financed by the Bonneville Power Administration and undertaken by federal agencies including the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Federal Energy Regulatory Commission and its licensees, and by state fish and wildlife agencies, Indian tribes, and occasionally private contractors. Every project proposed to the Council to implement the program is reviewed by the 11-member Independent Scientific Review Panel to be sure it is based on sound scientific principles and is consistent with the Power Act.

## The Northwest Power Plan

Following final approval of the fish and wildlife program, the Council revises the power plan. Under the Power Act, the fish and wildlife program is part of the Power Plan.

The plan is a 20-year blueprint to meet future demand for power that includes an electricity demand forecast, electricity and natural gas price forecasts, an assessment of the amount of cost-effective energy efficiency that can be acquired over the life of the plan, and a least-cost generating resources portfolio. The plan guides Bonneville's decision-making to meet its customers' electricity load requirements and also serves as a useful guide for investor-owned utilities in their own least-cost planning.

In the Northwest Power Act, a law that was ahead of its time, Congress concluded that energy efficiency should be the priority energy resource for meeting the region's future load growth. The Act includes a provision that directs the Council to give priority to cost-effective energy efficiency, followed by cost-effective renewable resources to meet future demand for power. In effect, for the first time, energy efficiency was deemed to be a legitimate source of energy on par with generating resources.

The rest is history. Since the release of the Council's first Northwest Power Plan in 1983 (one year after the first fish and wildlife program), the region's utilities have acquired the equivalent of around 6,900 average megawatts of energy efficiency. Expressed as electricity, that is more than enough to power five cities the size of Seattle.

During the roughly two years after the revision of the power plan and the beginning of work on the next fish and wildlife program, the Council and its staff monitor implementation of the two planning documents, meet with energy and fish and wildlife experts to discuss contemporary issues, and monitor progress toward goals in the plan and program.



# Members

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## Comments by the Bonneville Power Administrator



### Department of Energy

Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

EXECUTIVE OFFICE

January 11, 2021

In reply refer to: DI-7

Dear Chair Devlin:

As Administrator of the Bonneville Power Administration, I want to express my appreciation for the Northwest Power and Conservation Council's work in 2020. In a very unpredictable and uncertain year, both the Council and BPA navigated challenging circumstances and complex issues while continuing the commitment to our mutual core principles of public engagement and regional collaboration.

It wasn't easy. Like BPA, the Council began conducting its work remotely in March, including its monthly Council meetings. Planning and conducting Council business in a fully remote public setting takes a lot of diligence and effort. I personally experienced this effort when I joined the Council to celebrate the 40<sup>th</sup> Anniversary of the Pacific Northwest Power Act. Despite a remote setting, the sentiment and gravity of the Power Act was fully recognized and celebrated seamlessly.

It is hard to believe that 40 years have passed since enactment of the Act, which continues to be an influential guide to the energy future of BPA and the Pacific Northwest. I valued the opportunity to reflect on the Act, along with you, Council Executive Director Bill Edmonds and Columbia River Intertribal Fish Commission Executive Director Jaime Pinkham. Sometimes it is nice to simply reflect on where we have been and what we have accomplished as a region, even when there is more work to do.

As I mentioned during my remarks, the Power Act prioritized conservation and encouraged the efficient use of energy, which helped save the region approximately 7,000 average megawatts and avoided emitting more than 22 million tons of carbon dioxide. Columbia River system dams have been overhauled, resulting in dramatic improvements in anadromous fish survival at and between the dams compared to pre-Act levels. We have protected, restored or acquired hundreds of thousands of acres of fish and wildlife habitat and increased production. By any measure, we have made tremendous progress by working together.

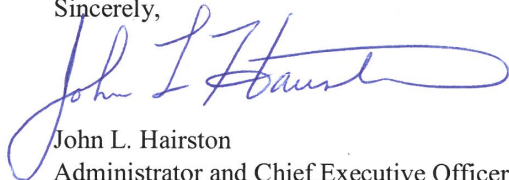
In terms of 2020, the Council concluded the fish and wildlife amendment process, which resulted in the 2020 Addendum to the 2014 Fish and Wildlife Program. We acknowledge the Council's effort over the last few years. Considerable work remains to be done for fish and wildlife in our region, and we recognize the goals and objectives in the Council's fish and wildlife program are

system-wide goals that likely can only be met through a well-coordinated effort mitigating all of the hydroelectric projects covered by the Power Act.

We likewise appreciate the Council's close working relationship with BPA and other regional interests on developing the 2021 Power Plan. The Council has taken an open, accessible approach to engage the region in that process. At the time I write this letter, initial modeling results are being shared, and the region is just beginning to grasp the potential implications that new and developing energy policies may have on the federal and, more broadly, the regional power system. In the coming months, we have much work to do to better understand how BPA and the region can most reliably and cost effectively meet our long term energy needs, including protecting the current benefits of the federal hydro system. Evolving clean energy policies, concerns about resource adequacy, cost management and climate change impacts are all converging to create a complicated energy future for us to navigate together.

Here is to a successful and collaborative 2021 for both our organizations.

Sincerely,

A handwritten signature in blue ink that reads "John L. Hairston". The signature is fluid and cursive, with a large loop at the end of the last name.

John L. Hairston  
Administrator and Chief Executive Officer







METOLIUS RIVER, OREGON, PHOTO BY MARK WALKER

COVER PHOTO BY SAMUEL GORBUNOV ON UNSPLASH.COM



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