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The Northwest Power Planning Council was established pursuant to the Northwest Power 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, fish and wildlife policy in the Columbia River Basin and to 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. Please request Council Document 96-13 or visit our web site: [www.nwcouncil.org](http://www.nwcouncil.org).

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## THE NORTHWEST POWER PLANNING COUNCIL

The Council is an agency of the states of Idaho, Montana, Oregon and Washington and was created as an interstate compact agency by the legislatures of the four states following President Jimmy Carter's approval of the Pacific Northwest Electric Power Planning and Conservation Act in December 1980. 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 of the Columbia River Basin that have been affected by the construction and operation of hydropower dams; and 3) to inform the Pacific Northwest public about energy issues and involve the public in decision-making. This annual report is organized around the Council's three key responsibilities.

There are eight Council members – two from each state – appointed by the governors. A list of Council members and their office locations is at the end of this report.

## POWER ISSUES

### A. Reliability and Adequacy of the Region's Electricity Supply

In 1999, at the request of the Bonneville Power Administration, the Council conducted an analysis of the reliability of the region's electricity supply. There was concern about the reliability of the system in light of a number of developments, including: 1) limited power plant development; 2) variability in precipitation and the resulting impact on hydroelectric system capability; and 3) the potential impact of extreme cold and dry winter weather and the resulting high demand for power.

Among the conclusions in the Council's report, which was completed in January 2000:

- The probability of some level of power supply inadequacy was becoming uncomfortably high - then predicted to reach 24 percent by 2003.
- The causes of the reliability problem were seen as combinations of extreme cold weather, poor hydropower generating conditions and possible forced outages of generating units.

- With the exception of unscheduled generation outages, these problems were seen as largely predictable. That is, they can be predicted at least a day in advance.
- The frequencies and duration of these events are relatively small, although their consequences could be quite costly. Because of this limited frequency and duration, it was considered unlikely that the expected market price of power would support building sufficient capacity to address these kinds of problems.
- Relatively few electricity customers see real-time market prices, and this mutes the demand response to impending supply inadequacy problems.
- The most promising short-term response to these problems was seen as voluntary load-shedding by electricity consumers, particularly large users.

Following its analysis of the problem, the Council undertook a second phase of the report in which it developed potential solutions with the advice and comments of regional energy experts. In a report issued March 6, 2000 (Council Document 2000-4), the Council offered the following

observations and recommendations to ease the power shortage:

- Provide incentives for construction of new power plants. As the result of deregulation and price competition among wholesale power suppliers, currently there is no assurance that the costs of a new plant will be recovered from power sales, and as a consequence few new plants are being built. Developers of new power plants now need periods of high prices in order to be able to recover their costs.
- Make electricity consumers, particularly the largest users, part of the solution. For example, compensate consumers for voluntary load reduction when the supply is tight, rather than involuntarily interrupting all customers.
- Revisit power sales contracts. Utilities that face the biggest problems during periods of high demand are those that buy a lot of power on the open market through short-term contracts rather than through longer-term arrangements that could be the basis for developers building new power plants.
- Investigate utilizing existing self-generation when needed. As much as 500 megawatts of installed power generation at large industries, which is used primarily by those industries, could be dispatched into the regional power grid during an emergency, but there are potential economic and environmental barriers that need to be better understood.
- Procedures and communications protocols have to be in place for effective short-term load reduction, including metering. Now is a good time to begin creating the partnerships and preparing to respond to future emergencies, if they develop.

When the price spikes of the summer of 2000 occurred, the Council prepared an analysis of the situation (Council Document 2000-18). The analysis saw the price behavior of that summer as essentially confirmation of the power supply adequacy problems identified in the earlier report. The analysis identified the causes of the price spikes as the interaction

of the fundamental undersupply of generation with the onset of poor hydro conditions, hot weather, the limited response of retail demand to wholesale prices and characteristics of the dysfunctional California market design.

The Council continued to issue periodic updates of the ongoing power system analysis through the winter and into the spring. On April 4, 2001, the Council completed a report entitled “Analysis of 2001-2002 Power Supply Outlook” (Council Document 2001-07). In that report, the Council noted that operational strategies for the Columbia/Snake river hydropower system are a key component of managing the hydrosystem through 2001. Objectives for hydrosystem operations included:

- Satisfying electricity demand through the spring and summer;
- Achieving reasonable summer flows for salmon migration;
- Not significantly worsening fall and winter reliability and the ability to meet reservoir target elevations for 2002 in the 2000 Biological Opinion on Operation of the Federal Columbia River Power System issued by the National Marine Fisheries Service; and
- Limiting the impacts of wholesale power purchase costs on the region’s economy and the financial condition of the region’s utilities.

To assess the options available to the region, the Council analyzed several alternatives for the operation of the power system in 2001. The analysis was done in two stages. The first focused on the spring and summer for two water scenarios – 1977 water and 1944 water, the lowest and second-lowest in the Columbia River Basin, respectively. Those years bracketed the current runoff volume forecast for 2001. For each of those water years, several operating strategies were evaluated. They included: running the hydropower system to the 2000 Biological Opinion constraints for spill and flows; maintaining spill while drafting the system deeper to meet loads; and three

strategies that involved significant reductions in spill combined with limited use of deeper drafts, with the objective of achieving Biological Opinion reservoir elevations by the end of August. The analysis looked at such metrics as the amount of curtailment that could be experienced, the cost of purchased power to address any curtailment, end-of-August reservoir elevations, and spring and summer flows.

The second stage of the analysis focused on the operation of the system through the fall and winter with the starting elevation of the reservoirs in September being the primary variable. This analysis was done probabilistically with uncertainty about fall and winter water conditions, temperatures and forced outages of thermal units. The analysis looked at the probability and magnitude of load loss during the winter period and April 2002 reservoir elevations.

The conclusions drawn from this analysis were:

- Extreme efforts to reduce loads and bring on new generation were required.
- Even with such efforts, operating the hydro-power system to the 2000 Biological Opinion targets for spill and flows would lead to either significant curtailments and/or very large purchased power costs this summer.
- Operations during spring and summer that leave reservoirs at the end of August at elevations significantly below 2000 Biological Opinion elevations expose the region to significantly increased probability of power supply inadequacy next winter. In addition, such operations would result in a significant probability that April 2002 reservoir elevations would be well below Biological Opinion elevations, thereby reducing spring flows for salmon.
- The only alternatives that both avoid curtailments and/or large purchased power costs in the summer of 2001 and return reservoirs to Biological Opinion elevations by the end of August involve substantial reduction in spill and limited drafting of reservoirs beyond Biological Opinion elevations. Reductions in spill can be

restored by power purchases, reductions in load and additional generation. Alternatives that significantly reduce spill have the additional advantage of reducing market prices in the summer of 2001 and bringing additional income into the region in the form of dollars, returned energy next fall and winter, or both.

- The Council recommended that decisions be made at that time, but with the understanding they could be revisited periodically later in the year. From the power supply standpoint, a prudent approach would be to significantly reduce spring spill, the Council recommended, noting that if conditions did not improve, the spill energy would be lost to the system.

As noted elsewhere in this annual report, power prices dropped and the supply increased in the late summer. This is not at all indicative of error in the Council's analysis. Rather, it is the result of actions having been taken consistent with the Council's recommendations. A significant amount of new permanent and temporary generation was brought on line, loads were reduced significantly through buyouts, voluntary curtailments and conservation, and over 4,000 megawatt-months of energy was not spilled. The Council conducted the best analysis and offered the best advice based on that analysis that was possible at the time.

The power system analysis continued through the fall of 2001, when the Council reported that the region faced less than a 1-percent probability of deficits in the winter of 2001/2002 thanks to an improved power supply in the Northwest and California, energy conservation and emergency hydro-power operations last spring and summer that resulted in higher reservoir levels for the fall and winter. While this was good news, it must be tempered by the realization that the improved outlook resulted largely from reduced demand brought about by the economic recession.

## **B. Electricity Prices Analysis**

Within a few months of the Council's report, wholesale electricity prices began to rise rapidly. By

the winter of 2000/2001, wholesale prices averaged \$250 per megawatt hour, a tenfold increase over prices just a year earlier, and in December prices briefly peaked over \$1,300 per megawatt hour.

In 2001, the Council continued its ongoing analysis of the volatile wholesale electricity market in response to significant regional concern about electricity supplies and prices this year and beyond. Our analysis indicated that the concern is well-founded. On March 26, the Council issued a paper entitled “Northwest Electricity Markets in 2001: Status and Proposed Actions” (Council Document 2001-5). The purpose of the paper was to clarify the electricity situation for 2001, to note the actions that are being taken to address the problem, and to urge additional actions that can be taken to help improve this year’s prospects for meeting electricity needs while minimizing impacts on fish programs and the regional economy.

In summary, the Council concluded that Western electricity markets were headed for a difficult summer and possibly a difficult winter of 2001/2002. Then current poor water conditions appeared to translate into continued tight electricity supplies for the remainder of the year. The Council predicted that accompanying high electricity prices could combine with a general slowdown in economic activity to create difficulties for many of the region’s businesses and citizens.

However, the addition of new supply, notably natural gas-fired generating plants in Oregon, Idaho and California, reduced industrial demand for power, increased energy conservation, moderate weather and, as a result, moderate demand for electricity, combined to actually drive prices down by mid-year to levels that had not been experienced since 1999. The news was not all good, however. Industrial demand was lower because thousands of people lost their jobs when industries reduced production or closed in response to high power prices during the fall of 2000 and the winter of 2001. Many utilities and businesses installed temporary generators, mainly small, diesel-

fired power plants, that make electricity for around \$100-\$140 per megawatt hour – an attractive option when the market price is \$200 or higher, but these plants were highly polluting. As the wholesale power price plummeted in the mid- to late summer of 2001, many of these plants became uneconomical to operate. Spill reductions at Snake and Columbia river dams in the spring and summer of 2001 contributed to the energy supply but also increased impacts on migrating juvenile salmon and steelhead. Bonneville was successful in restoring end-of-summer reservoir levels to Biological Opinion levels and storing additional water in Arrow reservoir in Canada.

The report on electricity markets recognized that individuals, businesses and utilities took actions to reduce energy demand. The report recommended the following additional actions that should be taken regionally:

- Public leaders should continue to inform and educate the public about the electricity problems faced by the region this year. Public awareness can be one of our most effective tools.
- Parties in the region need to come to agreement about hydropower operating strategies for the summer that prioritize water usage to strike an appropriate balance among reliability of electricity supply, costs to the region’s economy, the financial health of the region’s utilities and salmon recovery goals.
- Utility regulators should support and expedite utility programs to implement emergency demand management programs.
- Siting and environmental agencies should expedite emergency siting of short-lead-time generation while still protecting the longer-term societal interests.
- The region’s utilities should seek to bring cost-effective emergency standby generation into the grid. Environmental agencies should cooperate by expediting temporary operating permits for such facilities, if necessary.

- Environmental agencies should work to temporarily relax restrictions that prevent existing generating plants from continued operation at full capacity, without jeopardizing public health and safety.
- Utilities and public agencies should expand the scope and funding of existing energy efficiency programs that can be expected to deliver savings in the short term.
- Utilities, the Bonneville Power Administration and regulatory agencies should begin the process of designing electricity pricing structures that provide price signals to help develop demand response to prices and shortages.
- State and local agencies should ensure that low-income assistance programs are adequately funded to respond to impacts from high electricity prices.

### **C. Preparing for the Next Northwest Power Plan**

The Fourth Northwest Power Plan was approved in draft by the Council in March 1996 but held open through 1996 during the Comprehensive Review of the Northwest Energy System. The Council then issued an addendum to the plan reflecting the recommendations of the Comprehensive Review Steering Committee and, following public comments, issued the final version of the plan in July 1998.

In 2001, with power system reliability and adequacy at the forefront of contemporary electricity issues in the Northwest, the Council is beginning to set the stage for the next iteration of the power plan. To that end, the Council staff prepared two issue papers for public comments, one dealing with energy demand forecasting, a critical task for the Council in preparing its power plans, and the other on the direct use of natural gas to replace major electricity uses in the home, such as space and water heating. More specifically, the Council is exploring whether to treat fuel switching to natural gas as an electricity conservation resource, which is not specifically acknowledged in the Northwest Power Act.

#### **1. Demand Forecasting**

The issue paper on demand forecasting (Council Document 2001-13), initiated a discussion about future Council forecasting of the demand for electricity. Many of the critical detailed components of the Council's models are becoming outdated due to reliance on old information about regional energy use. The Council needs to gauge the region's opinions about the value of its demand forecasting and what level of support is warranted for future demand forecasting techniques.

The paper described the historical context of the Council's Demand Forecasting System, which is important to explain the choice of models and procedures used to develop the Council's electricity demand forecasts in past power plans. The changing structure of electricity markets has changed the environment in which the Council does its forecasting and planning. As a result, it is important to reassess the approach to demand forecasting in light of new requirements and regional needs before substantial sums of money and regional effort are put into developing a new demand forecasting system.

The paper explained the current forecasting system in general terms and invited comments on its usefulness, explained the various uses of the forecasts within the Council's planning process and by others in the region, and proposed several alternative approaches to both the upcoming power plan revision and the longer-term demand forecasting role.

The Council accepted public comments on the paper and then decided, after reviewing the comments, not to make substantial changes to the demand forecast in the 1998 Power Plan. Public comments indicated a clear need to focus more effort on near-term peak loads and load shapes than on long-term demand. Commentors split on the question of whether the Council should perform detailed analyses of long-term demand. The Coun-



cil will take up the issue again as work on the next power plan progresses.

## 2. Direct Use of Natural Gas

In the Fourth Northwest Power Plan, the Council addressed the role of direct uses of natural gas for space and water heating, compared to using electricity for those purposes. It is the Council's interpretation of the Northwest Power Act that direct uses of natural gas do not constitute a generating resource and do not constitute a form of energy conservation when installed in place of electric appliances. However, natural gas utilities have suggested to the Council that a campaign to convert electric space and water heat to natural gas could help alleviate the electricity supply shortage in the region.

In light of the proposal from the natural gas utilities and the predominance of natural gas-fired combustion turbines being used in new electricity generation, the Council decided to reconsider its natural gas policies. The issue for the Council is whether it is better to use natural gas directly for space and water heating, rather than using it to generate electricity for these end uses. Also in question is whether the Council should take a role in these fuel choice decisions, and if so, what that role should be.

An issue paper (Council Document 2001-17) laid out a number of possible actions and policies that could be combined to form a Council policy. The Council's Power Committee met with a panel of energy industry experts in August, and also with representatives of the Pacific Northwest Utilities Conference Committee in September to discuss fuel switching. After considering these comments and discussions, the Council decided to maintain its current policy – encouraging a market-based approach to fuel switching, one that preserves individual choices about energy sources and recognizes that substantial benefits can accrue from healthy competition among natural gas, electricity and other fuels. The Council may pursue the issue further, and will decide that as it develops the new power plan.

## D. Energy Conservation

In the Northwest Power Act, energy conservation is treated as an electricity resource the same as generating plants. The Council's first Northwest Power Plan, adopted in 1983, made conservation the resource of choice to meet future demand for power in the region, and since that time the region's utilities and the Bonneville Power Administration collectively have acquired more than 1,500 megawatts of energy conservation – more than enough to power the city of Seattle.

The Council's current power plan, which dates to July 1998, established conservation acquisition targets for the region that, unfortunately have not been met. The primary reason appears to be the same reason construction of new generating plants has lagged behind demand for power – uncertainty associated with the ongoing restructuring of the electricity industry, combined with unattractive price signals from the volatile, deregulated wholesale electricity market, discouraging investment in new resources. Developers have been reluctant to invest millions of dollars in new generating or conservation resources if they perceive a risk that the investments will be stranded in the future by low market prices. Yet if the Council's conservation targets had been met, it could be argued that price volatility might have been tempered by the additional energy "supply" in the form of reduced demand for power.

Regional conservation achievements have been tracked by the Regional Technical Forum, a panel of energy experts formed by the Council in July 1999. The purpose of the RTF is to further the implementation of energy conservation and renewable energy resources in the Northwest. Specifically, the RTF developed standards and protocols by which electric utilities could assess the effectiveness of conservation activities. The RTF tracks and reviews regional progress toward conservation and renewable resource goals, and provides feedback and suggestions for improving conservation and renewable pro-

grams in the region. In addition, Bonneville asked the RTF to establish and update recommended lists of standard conservation measures with their estimated savings and regional value, evaluate protocols not on the standard list and track accomplishments. The lists and estimated savings will be used by utilities to design conservation and renewable resource programs eligible for Bonneville's conservation and renewable resources discount during the 2002-2006 rate period, which began in October 2001.

The results of the RTF's survey of conservation achievements, posted on the Council's website, [www.nwcouncil.org](http://www.nwcouncil.org), show that since 1997, a year after the Council published its regional conservation targets in its draft Fourth Northwest Power Plan, the region has acquired only about half as much conservation as the Council proposed. Specific amounts, by utility and by year, also are posted on the Council's website under the tab labeled Conservation.

Despite the lackluster achievement to date, the Council believes there is great potential for additional conservation acquisitions despite the volatile wholesale power market. The power plan estimated the potential at 1,535 megawatts at a price of about 2.5 cents per kilowatt-hour (\$25 per megawatt-hour). But in light of generally higher market prices for power today than in 1998, when the Council issued the power plan, it appears there is an additional 2,000-2,400 average megawatts of conservation potential at a cost between 2.5 cents and 5.5 cents per kilowatt hour (\$25 to \$55 per megawatt-hour). Sixty percent of the additional potential conservation is in industrial and commercial settings.

In an August 2001 report to a Congressional subcommittee investigating solutions to the regional energy shortage, the Council testified about potential energy conservation and offered the following recommendations for utilities and their customers:

- Mobilize citizens and businesses to take actions that improve the efficiency of energy use, not just curtail their use.

- Focus investments by utilities and businesses on energy efficiency measures that can be put in place quickly, such as installing compact fluorescent light bulbs in residences, replacing commercial building lighting, improving the efficiency of commercial building heating and cooling systems, fixing compressed air leaks in industrial settings, installing controls on vending machine lighting and cooling, and retiring aged and second refrigerators.
- Change the conservation "message" from curtailment, which many people translate as "freeze in the dark" to "efficiency," which means using less electricity with no loss of comfort.
- Coordinate a "Call to Arms" for conservation among utilities and others.

Meanwhile, in October 2001 the Council released an analysis that asserts the Pacific Northwest could acquire an amount of energy conservation equal to the output of a large natural gas-fired power plant during the next three years – about 300 megawatts – at a lower cost than building such a plant. New energy conservation would save electricity now and also help moderate future price spikes such as those that battered the region's utilities and consumers in the last year, according to the analysis.

The 300 megawatts, which the analysis calls "an efficiency power plant," is an interim target to be pursued while the Council works on developing the next power plan. The interim target is intended to encourage utilities and others responsible for conservation implementation to maintain the conservation momentum developed over the last year in response to high power prices.

During the last few years of the 1990s, utilities developed conservation at half the rate the Council had determined to be cost effective in the 1998 power plan. Had the cost-effective conservation been fully developed, it would have displaced approximately 180 megawatts of power, enough for about 100,000 average Northwest homes. Because it was not developed, the region's utilities had to purchase that much

more power, often at extraordinarily high prices. By establishing an interim conservation target, the Council seeks to ensure that the region is not in the same position when prices become volatile again.

According to the analysis, the region could acquire approximately 100-110 megawatts of conservation per year for the next three years for less than the cost of power from a new combustion turbine - about 3 cents per kilowatt-hour for the conservation. The cost of a new gas-fired plant is in the range of 3 to 3.5 cents per kilowatt-hour. Almost 60 percent of the conservation potential is in commercial and industrial structures and applications, according to the analysis.

The analysis is posted on the Council's website.

### **E. Regional Transmission Organization**

Federal Energy Regulatory Commission (FERC) Order 2000 envisions the use of collaborative processes as the means for developing regional transmission organizations (RTOs) throughout the country. These organizations would 1) administer transmission systems in a way that encourages the efficient use and expansion of the systems; 2) manage congestion on transmission lines; 3) plan upgrades and additions; and 4) deal with technical issues on a coordinated systemwide basis.

In the Northwest, the RTO filing utilities made an initial filing with FERC in October 2000 and are continuing their collaborative process with a target of a more complete Stage Two filing at FERC by March 1, 2002. The Council is participating in the collaborative process of developing a Northwest RTO, called RTO West.

The filing utilities are addressing a number of issues raised by the Council and regional stakeholders. The effort is more complicated in the Northwest than elsewhere in the country because much of the high-voltage transmission in the region is owned and operated by the Bonneville Power Administration. Mixing federal and non-federal transmission

under the same management entity is challenging. Nonetheless, the filing utilities are developing their proposal in a collaborative process that includes discussion of creating a non-profit entity with management responsibility for the transmission assets of participating utilities, including Bonneville.

In a letter to the utilities in April 2000, then-FERC Chair James Hoecker praised the Northwest effort as "the most well-organized" in the country and "truly historic in terms of both electricity policy and regional compromise and coordination." Further, Hoecker noted, "I understand the challenges faced by the economically diverse Northwest region in terms of its relationship with Canadian interests, the importance of hydro resources, the central role played by the Bonneville Power Administration in the region, and the variety of utility, consumer and environmental interests involved. It is clear that you have nevertheless seized the opportunity presented by Order No. 2000 to create a workable RTO that serves the special needs of the region."

Partly in response to the difficult Western power market over most of the period since the summer of 2000, FERC has become more aggressive about the geographic scope it would like to see in RTOs. It has indicated in several orders that it would like to see a single west-wide RTO rather than the three that are currently in various stages of development - RTO West, Desert STAR and the California ISO. Moreover, it has indicated that it believes RTO West could provide the best platform for a west-wide RTO. However, many Western interests believe that this would be a very difficult goal, at least in the short run. Consequently, a significant effort is underway among the three Western RTO candidates to ensure that the creation of the three RTOs addresses FERC's concerns and does not create market barriers at the seams between them, but rather enhances the competitive power market. The Council is active in that effort.

## FISH AND WILDLIFE ISSUES

### A. Analysis and Recommendations Regarding 2001 Hydrosystem Operations

In the spring of 2001, with Columbia River Basin runoff shaping up as the worst or second-worst on record, the Council offered recommendations for spring and summer hydrosystem operations in recognition of the poor runoff conditions, growing Bonneville Power Administration financial problems from decreased hydropower and looming concerns about the adequacy and reliability of the region's energy supply.

In a paper issued March 30 entitled "Analysis of 2001 Federal Columbia River Power System Operations on Fish Survival" (Council Document 2001-06), the Council recognized that the operations of the Federal Columbia River Power System (FCRPS) most likely would be changed this year to optimize power production and help offset the growing Northwest power shortage. At that time, reductions in spill for juvenile fish passage at the dams were considered one way to help meet energy demand. While spill reductions may help ease the difficult power situation, it was unclear how those reductions would affect juvenile fish survival. To help answer that question, Council staff examined the possible relative biological effects of various spill and smolt transportation alternatives on Columbia Basin fish survivals.

While there are many unlisted hatchery and naturally spawning populations in the Columbia Basin, the Council analysis focused solely on ESA-listed stocks. The 2000 Biological Opinion uses a combination of strategies to help juvenile salmon and steelhead migrating to the ocean pass through or around each hydroelectric dam on the Columbia and Snake rivers. There are four possible routes: 1) through a juvenile bypass system, which intercepts fish with screens and routes them through a specially designed passage in the dam; 2) by opening the spill gates, which routes the fish over the spillway but

decreases the water available for generating electricity; 3) through the turbines, which is not a preferred route due to reduced survival; and 4) by intercepting fish and transporting them in barges to a release point below the hydroelectric system.

The Council used the SIMPAS model of the hydrosystem to project juvenile fish survival under various hydrosystem operations, the same model used by the National Marine Fisheries Service in the 2000 Biological Opinion. The Council's analysis demonstrated that, when compared to full implementation of the 2000 Biological Opinion under 2001 water conditions, spill reductions at FCRPS dams:

- Have little to no effect on the total system survival of Snake River spring/summer chinook, Snake River steelhead or Snake River fall chinook.
- Decrease total system survival for upper Columbia spring chinook, upper Columbia steelhead and middle Columbia steelhead to the highest extent compared to other populations (these stocks are not transported and pass through several dams).
- Have less effect on the total system survival for lower Columbia chinook and lower Columbia steelhead because 1) most of these listed populations are geographically situated below Bonneville Dam and 2) the Lower Columbia chinook and steelhead only pass Bonneville Dam.

When compared to full implementation of the 2000 Biological Opinion under 2001 water conditions, the Council's analysis demonstrated that full transportation of smolts from McNary Dam with no spill at other mainstem federal dams:

- Increases upper Columbia spring chinook total system survival under all alternatives.
- Increases upper Columbia steelhead total system survival under most conditions.

For the alternatives examined, estimated adult losses for listed fish ranged from:

- Zero adults lost for Snake River steelhead (0.0 percent of total return) to 2,535 upper Columbia spring chinook adults lost with no transport at McNary Dam (12.7 percent of total return).<sup>1</sup>

On April 5, the Council offered preliminary recommendations to the federal operating agencies in advance of the mid-April beginning of fish operations at the dams. The Council invited public comment on the recommendations through April 20, and then issued its final recommendations on April 26. The Council modified its recommendations to address summer spill on June 27 (the operating agencies, citing the Council's recommendations, decided to allow very limited spill in the spring and summer).

The Council recommended:

- Full transportation of juvenile salmon and steelhead in spring and summer where that option is available. This recommendation would apply to Lower Granite, Little Goose, Lower Monumental and McNary dams, which are the only ones with transportation capabilities. The federal agencies should transport from McNary in the spring, as well as the summer, pending an immediate evaluation of the effectiveness of spring transportation from that project, except for fish marked for inriver studies. The federal agencies should develop a study plan for these operations and submit it to the Council and the Independent Scientific Advisory Board for review.
- Limited spill at John Day, The Dalles and Bonneville dams. The Council requests the federal operating agencies and the federal, state and tribal fish and wildlife agencies work with the Council to develop a plan for when, where and how such spill would be provided. The summer operating plan should not decrease the currently forecast level of electrical reliability and should deploy any additional water storage to assure the best benefit to fish. The plan should target spill to optimize benefits for fish populations that are central to the biological objectives in the Council's program that will be adversely impacted by changes in the operation of the hydrosystem. This includes ESA-listed and unlisted populations of spring chinook from tributaries above Bonneville Dam, the listed Middle Columbia steelhead and Hanford Reach fall chinook. Spill at one of these projects would be used whenever there are substantial indications that fish passing the project are being significantly delayed or harmed by the other passage alternatives available at that project, provided that the spill can be accomplished in a way that maximizes fish benefits and minimizes power impacts.
- The Bonneville Power Administration establish a mitigation fund from a portion of the revenues resulting from decreased spill. In the event there also is a reduction in spill authorized for the non-federal mid-Columbia projects, the Council recommends that a portion of those revenues also be designated for this fund. As a first priority, this fund would be used for increasing flows in tributaries and the mainstem by encouraging

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<sup>1</sup> The Council continued to analyze the biological impacts of reduced spill through the spring and early summer. On April 30, the Council issued an analysis focusing on the potential impacts of decreased spring spill at mid-Columbia dams and increased smolt transportation at the collector dams. In that analysis, the Council reported that for spring chinook and steelhead, stopping summer spill at Mid-Columbia dams would decrease survival by about 10.6 percent, and stopping spill at those dams and the federal dams downstream would decrease survival by 14-15 percent. On the other hand, maximizing transportation of smolts at McNary Dam and maintaining spills proposed by the federal agencies would increase survival between 10 and 30 percent. The Council presented the analysis to federal decisionmakers for use in their deliberations about whether and when to spill.

On June 14, the Council completed another analysis, this one of the effects of summer spill and fish transport on the survival of outmigrating juvenile fall chinook. The analysis demonstrated that summer spill has little or no benefit for outmigrating Snake River fall chinook because by mid summer most of those fish already have migrated, and most have been collected and transported in barges. However, the analysis showed that spill has some benefit to Hanford Reach fall chinook, as more Hanford Reach fish remain in the river than Snake River fish because McNary Dam is the only project where Hanford Reach fish can be collected and transported. Again, the results of the Council's analysis were presented to federal decisionmakers.

voluntary reductions in the use of water for irrigation, on a willing-seller basis consistent with state and federal law.<sup>2</sup>

- At a minimum, the refill of reservoirs to 2000 Biological Opinion target levels by August 31 must be a priority to assure future electrical reliability and to preserve the ability to implement future fish operations.
- Bonneville should plan and budget for power purchases and for continued irrigation buybacks. BPA should be prepared to purchase or exchange power to the extent consistent with prudent financial planning. Bonneville and others should also continue the buyback program from all available commercial sources, including irrigated agriculture. These purchases should include instream protection for water not pumped, consistent with state and federal law.<sup>3</sup>
- Bonneville should seek and obtain available instream water rights to provide needed flows, consistent with state and federal law, on a willing-seller basis.
- The operating agencies should keep the Council closely informed on the implementation of these recommended operations, including the effectiveness of transportation and the use and effectiveness of spill.

## **B. A Mainstem Plan for the Columbia River Basin Fish and Wildlife Program**

In January 2000, the Council began the fifth revision of the Columbia River Basin Fish and Wildlife Program since the program initially was adopted in November 1982. As with past amendment processes, the program is being revised in phases.

Past versions of the program were criticized by scientists for consisting primarily of a number of measures that called for specific actions without a clear, programwide foundation of scientific princi-

ples. The new version of the program, which the Council completed in October 2000, expresses goals and objectives for the entire basin based on a scientific foundation of ecological principles.

In 2001, the Council began the second phase of the program amendment process, a separate plan for the mainstem Snake and Columbia rivers. The role of the mainstem plan and the Council's expectations for the elements of that plan are described in the 2000 Fish and Wildlife Program, in the section on Basinwide Hydrosystem Strategies and in the section entitled Schedule for Further Rulemakings. As described in the program, the mainstem plan will contain the specific objectives and action measures that the program calls on the federal operating agencies and others to implement in the mainstem Columbia and Snake rivers, including operations of the hydrosystem, to protect, mitigate and enhance fish and wildlife affected by the development and operation of the hydroelectric facilities. The plan may include, as appropriate, objectives and measures for water management, flow regimes, spill, reservoir elevations, water retention times, adult and juvenile passage modifications at mainstem dams, fish transportation, systemwide coordination, protecting and enhancing mainstem spawning and rearing areas and operational requirements to protect resident fish and wildlife. The hydrosystem objectives contained in the mainstem plan also should provide guidance to the Council's subbasin planning process, establishing for the subbasin planners the expectations of the program for mainstem survival of fish that spawn in tributaries but rear and migrate through the mainstem. The Council will also analyze mainstem recommendations to ensure that the Council adopts objectives and measures for mainstem system operations that protect, mitigate and enhance fish and wildlife while also assuring the region an adequate, effi-

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<sup>2</sup> See Bonneville's comment on this recommendation. Bonneville's comments begin on Page 26 of this report.

<sup>3</sup> Bonneville also comments on this recommendation. See Page 27.

cient, economical and reliable power supply.

The Council requested recommendations for the mainstem rule in the spring of 2001 and subsequently received 21 recommendations from a wide variety of interests, including state and federal fish and wildlife agencies, Indian tribes, electric utility associations and interested citizens. These were compiled and released for public comment through August 1, 2001.

The Council plans to prepare a draft mainstem rule for public review and complete the rulemaking in 2002.

### C. Subbasin Planning

In 2000, the Council restructured the fish and wildlife program with a comprehensive, underlying framework of general scientific and policy principles that apply to the entire Columbia River Basin. In 2001, the Council is moving ahead in developing separate plans for the 62 subbasins of the Columbia River Basin. These plans, which will be adopted into the program as they are completed, will identify needs and provide the basis for actions recommended by the Council and funded by the Bonneville Power Administration to implement the program.

Like the program itself, each subbasin plan will articulate a framework of fundamental elements for the mitigation efforts including:

1. A **vision**, which describes what the plan is trying to accomplish with regard to fish and wildlife and other desired benefits;
2. **Biological objectives**, which describe the ecological conditions needed to achieve the vision; and
3. Implementation **strategies, procedures and guidelines**, which guide or describe the actions leading to the desired ecological conditions.

In other words, the vision implies biological objectives that help establish the strategies. In turn, strategies address biological objectives and,ulti-

mately, fulfill the vision. A scientific foundation, included as part of the 2000 Program, links the components of the program framework, explaining why the Council believes certain kinds of management actions will result in particular physical habitat or ecosystem conditions of the basin, or why ecosystem conditions will affect fish and wildlife populations or communities.

The Council recognizes that the planning process involves the participation of local stakeholders who will play a lead role in developing subbasin plans, and that this will take time to accomplish. Given that, a transitional process was established so ongoing projects can be reviewed and funded. Until formal subbasin plans are created, interim documents called "subbasin summaries" will be used to guide project selection. Summaries are a compilation of all the existing information about a subbasin, including past and ongoing fish and wildlife activities, and current management plans, objectives and policies. Much of the summary information will help to fulfill the inventory component of subbasin plans. These summaries will include as much information as possible until the more comprehensive plan is completed and eventually, the summaries will be replaced by subbasin plans.

Subbasin summary development is well underway in the 11 provinces. The Inter-Mountain and Columbia Gorge provinces completed subbasin summaries in the fall of 2000. Those provinces, along with the Mountain Columbia, will be the first three provinces to transition into the subbasin planning phase this fall and winter. The remaining nine provinces have been in various stages of the process throughout 2001 with the mainstem/systemwide scheduled last to begin, in the fall of 2001.

The Council's subbasin planning staff developed guidance materials to assist subbasin planners. A regional workgroup was assembled to create a technical guide for practitioners to use at the local level. In addition, a plan overview and a technical outline were created as summary documents to describe the

purpose and elements of a subbasin plan to non-technical audiences.

Once the Council had further defined subbasin planning elements, it was important to have a timeline for submitting subbasin plans. A schedule was developed to provide subbasin planners a target date for submitting plans to the Council for review and adoption in the program. The schedule is organized by province and is largely driven by the province review schedule (further described in the next subsection of this annual report). The schedule allows the Council one year to review and adopt a plan prior to the next project solicitation so that the project review is based on the information contained in the subbasin plan.

The overview and technical guidance documents, as well as the province review schedule are available on the Council’s website, [www.nwcouncil.org](http://www.nwcouncil.org).

The Council will provide technical assistance in developing plans, especially in the assessment phase. The coarse-screen data to be used in Ecosystem Diagnosis and Treatment modeling is complete for each of the 62 subbasins and can be found at [www.edthome.org](http://www.edthome.org). Council staff will conduct workshops in the provinces beginning in the fall of 2001 to provide assistance in meeting program requirements, completing assessments and coordination with fish and wildlife agencies involved in implementing the 2000 Biological Opinion.

A map of the 11 ecological provinces is below:



**Figure 1. Ecological Provinces of the Columbia River Basin (the Columbia River estuary is considered the 11th province).**



## **D. Mitigating the Impact of Hydropower on Fish and Wildlife**

### **1. Projects Funded Directly by Bonneville Through the Columbia River Basin Fish and Wildlife Program**

2001 is the second year of the Council's transition from an annual review of all projects that implement the fish and wildlife program to a rolling, three-year review process in which projects are proposed, reviewed and recommended for funding within the 11 ecological provinces. The Council has committed to address three or four provinces each year. Approved projects are funded for three years; there is an annual, interim review to ensure progress is being made. In this way, the Council's 11-member Independent Scientific Review Panel, created by Congressional direction through a 1996 amendment to the Northwest Power Act, is able to give each project a thorough review, including site visits where appropriate.

A complete schedule of provincial reviews, including those completed to date and those scheduled in the future, is posted on the website of the Columbia Basin Fish and Wildlife Authority, [www.cbfga.org](http://www.cbfga.org).

### **2. Projects Reimbursed to Federal Agencies by Bonneville**

Bonneville reimburses the United States Treasury for most of the cost of projects to address the impacts of construction and operation of federal dams in the Columbia Basin. This includes fish passage projects, fish propagation and a part of the costs allocated to irrigation in the form of irrigation assistance. For projects at the dams, Bonneville's reimbursements are equal to the percentage that hydropower is an authorized purpose of each dam, generally about 75 percent.

The Conference Report to the Fiscal Year 1999 Energy and Water Development Appropriations Act (H.Rept. 105-749) directed the Northwest Power Planning Council and its Independent Scientific

Review Panel to conduct a review of the Columbia River Basin fish and wildlife programs that are reimbursed in whole or part by Bonneville. The conferees directed the Panel to complete its review by April 1 of each year and the Northwest Power Planning Council to submit a report to Congress by May 15 of each year.

The Panel was directed to review the reimbursable programs to determine their consistency with the scientific criteria included in section 4(h)(10)(D) of the Northwest Power Act as amended in 1996. Under that provision, the Council must respond specifically to the recommendations of the Panel. The Council interprets its obligations to use the Panel's report as the basis for program funding recommendations to the Congress.

The 1996 amendment to the Power Act did not prescribe in detail the process by which the ISRP must conduct its review. This flexibility provides an opportunity to modify the review to utilize a methodology and sequencing based on ecological provinces. Under this approach, the ISRP will review reimbursable projects and programs simultaneously with projects funded through the Council's fish and wildlife program. In 2000, when the province review process was initiated with the Columbia Gorge and Inter-Mountain provinces, the ISRP chose to refine the review process and address reimbursable projects as part of those reviews.

Meanwhile, the ISRP reviewed the federally funded Lower Snake River Compensation Program hatchery program as part of reviewing projects in the Columbia Plateau, Blue Mountain and Mountain Snake provinces.

Also, in December 2001, the ISRP completed its review of the Army Corps of Engineers' reimbursable projects. The Council plans to submit its report to Congress on the reimbursable projects in early 2002, in time for the Fiscal Year 2003 appropriations process.

### 3. Innovative Projects

On February 7, 2001, the Council approved a motion to recommend nine proposals for Bonneville funding in Fiscal Year 2001. The total requested funding was \$1,994,109.

The Council and Bonneville earmarked a total of \$2 million from the fish and wildlife budget to fund innovative projects this year. This funding category was designed to extend an open invitation to a broad array of sponsors from within and outside the basin to submit proposals to explore new methods and technologies for fish and wildlife recovery in the Columbia River Basin.

A total of 66 proposals were submitted for consideration. The Independent Scientific Review Panel reviewed and ranked each of these proposals on the basis of their scientific merit, innovative contribution, and potential benefit to fish and wildlife. Similarly, the Columbia Basin Fish and Wildlife Authority completed a review based on the potential application of each proposal to management needs. The public also was invited to submit comments on the process, proposals, and reviews considered under the innovative category. The innovative project solicitation will be conducted annually.

### 4. High Priority Projects

In the 2000 Fish and Wildlife Program, the Council requested Bonneville to solicit “high priority” projects that would bring immediate benefits to salmon and steelhead populations listed for protection under the Endangered Species Act. These projects, the Council reasoned, should proceed in advance of subbasin plans, which will address the needs of both listed and nonlisted populations. The 2000 Program established criteria for the high priority projects, which addressed the off-site mitigation requirements of the 2000 Biological Opinion.

Following the solicitation and a review of project proposals by the Independent Scientific Review Panel on March 26, 2001, the Council recommended

17 projects totaling \$19.3 million to Bonneville for funding.

### 5. Emergency Hydropower Operations Offset (“Action Plan”) Projects

In February, as it became clear that 2001 would be an unusually dry year in the Columbia River Basin – by summer it was the second-driest in 73 years of Columbia River recordkeeping – Bonneville declared a power emergency and modified or suspended some of the river operations requirements of the 2000 Biological Opinion. Primarily, Bonneville reduced or eliminated water spills at Snake and Columbia river dams during the spring and summer, when juvenile salmon and steelhead are migrating to the ocean, in order to reserve water in storage reservoirs for hydropower.

To mitigate the impacts of these emergency power operations at the dams, Bonneville committed to fund an Action Plan of projects that would bring immediate benefits to the affected species. Projects in the Action Plan, Bonneville announced, would be consistent with the Endangered Species Act and the Northwest Power Act, and funding for the projects would be over and above the other mitigation and recovery actions Bonneville plans to implement.

Following Bonneville’s project solicitation and a review of the submissions by the Independent Scientific Review Panel, in June and August, 2001, the Council recommended a total of 29 projects totaling about \$29 million for funding. Projects that Bonneville chooses not to fund could be reconsidered in the appropriate provincial review process for funding through the Council’s fish and wildlife program.

### **E. Other Fish and Wildlife Initiatives**

#### 1. Caspian Tern Relocation

In 2000, the effort to relocate a large nesting colony of Caspian terns continued in the Columbia River estuary. The tern colony, which nests and rears chicks each spring and summer in the estuary, is

believed to be the largest such colony in the world. Unfortunately, the island where the terns preferred to nest, Rice Island, is near an area of the estuary where young salmon and steelhead acclimate to salt water, and these provided a plentiful food source for the birds.

The relocation effort began several years ago after researchers for the National Marine Fisheries Service and the Columbia River Inter-Tribal Fish Commission demonstrated that the diet of Rice Island terns contained a high percentage of salmon and steelhead smolts, including endangered species. An alternative nesting site was prepared at East Sand Island, nine miles downstream, where there are fewer salmon and steelhead smolts. The Council is helping to finance the relocation effort.

Evidence gathered by researchers in 2001 showed that the relocation effort, which involved passive, nonlethal means of discouraging the birds from nesting on Rice Island, had been successful. No terns nested on Rice Island in 2001, and East Sand Island was the preferred nesting site for the colony. Research also showed that salmon and steelhead comprised a much smaller proportion of the diet of terns nesting on East Sand Island than had been the case on Rice Island, as other fish species, such as minnows, are more abundant around East Sand Island than are salmon or steelhead.

In August 2001, as terns were leaving East Sand Island and researchers were finishing their work for the year and beginning to plan for the 2002 nesting season, a federal district court judge in Seattle issued a decision in lawsuit that effectively halts all federal work on Rice and East Sand islands, such as planting grass or building fences to discourage terns from nesting on Rice Island and clearing nesting areas on East Sand Island, until the Corps of Engineers prepares an environmental impact statement on the relocation efforts. The Corps estimates that will take a year. The ruling also effectively halts any tern activities authorized by the U.S. Fish and Wildlife Service, such as collecting tern eggs for research purposes.

Caspian terns are a protected species under the Migratory Bird Treaty Act. Plaintiffs had asked the judge to order the Corps, which owns East Sand Island, to prepare an environmental impact statement to demonstrate that the birds are not being harmed.

## 2. Artificial Production Review Committee

In July 1997, Congress directed the Council, with the assistance of the Independent Scientific Advisory Board, which advises both the Council and the National Marine Fisheries Service, to conduct a thorough review of all federally funded artificial production programs in the Columbia River Basin. Congress directed the Council to recommend, based on the report, a coordinated policy for future operation of artificial production programs and how to obtain such a policy.

In its October 1999 report to Congress, the Council stressed that the region needs action and leadership to implement new artificial production policies, to decide whether and where to use artificial production, and to ensure that future artificial production funding is contingent on reforms being made. These decisions need to be made for each subbasin and implemented as part of a broader strategy to meet regional fish mitigation goals. The Council is incorporating the recommendations of the Artificial Production Review in its amended fish and wildlife program, and also has set in motion the needed subbasin planning effort.

To conduct the evaluations of artificial production programs – there are approximately 120 in the Columbia Basin – the Council created an Artificial Production Advisory Committee to assist the Council staff and the independent contractor hired for the effort. In August 2001, the Council approved a workplan for the evaluations that will:

- Determine whether a program matches its stated purpose;
- Evaluate whether a program is consistent with legal, policy and scientific criteria;

- Examine operational costs, production and adult return information;
  - Recommend interim changes; and
  - Develop a preliminary budget/costs to implement the interim changes and determine possible future costs.
- A brief discussion of the Council's current fish and wildlife program, which includes amendments for improving data collection and management to increase the public accountability for Bonneville's substantial investment in fish and wildlife.

The evaluations are expected to take a year. From the evaluation reports, a list of issues will be prepared and reviewed, recommended changes consistent with the identified issues will be developed, and a final list of projects approved by the Artificial Production Advisory Committee will be presented to the Council in December 2002.

### 3. Inaugural Annual Report of the Fish and Wildlife Program, 1978-2000

In July 1999, the governors of Idaho, Montana, Oregon and Washington asked the Northwest Power Planning Council to prepare an annual report that provides an ongoing accounting and assessment of the Bonneville Power Administration's fish and wildlife expenditures. Additionally in their letter, the governors requested that the first report summarize, to the degree possible, historical documentation on past expenditures and program successes and failures, and that the Council devise a method of assessing the impact of funding decisions on the basin's fish and wildlife resources.

The Council completed the inaugural annual report in 2001. The report includes:

- A brief history of the Northwest Power Act, the Council and the fish and wildlife program;
- An accounting of Bonneville's fish and wildlife expenditures, which are primarily for the purpose of implementing the Council's program, and those Bonneville obligations that result from Endangered Species Act requirements;
- Information about fish and wildlife populations in the basin that are addressed by the program, including salmon and steelhead, resident fish, and wildlife.

Bonneville reports its fish and wildlife expenditures as the combined totals of spending on 1) the Council's direct program; 2) federal agency expenditures that are reimbursed by Bonneville; 3) the total repayment of capital investments for fish and wildlife projects; and 4) revenue impacts, which are the estimated net impacts on Bonneville's revenue from adjusting dam operations to benefit fish.

According to the report, since 1978 Bonneville's fish and wildlife expenditures total \$3.48 billion. Of this total, approximately 39 percent was attributed to hydropower operations generally intended to support migrating fish. These costs are calculated based on changes in electricity generation caused by altering water flows or implementing increased spill at the dams. The direct program, for which the Council provides more oversight, constitutes approximately 23 percent of the total Bonneville expenditure. Most of the direct program budget is dedicated to habitat (42 percent), with significant amounts allocated to artificial production (32 percent) and mainstem passage (23 percent). Most of this money is directed toward anadromous fish (76 percent), especially salmon and steelhead, with the remainder benefiting resident fish (12 percent) and wildlife (12 percent). Bonneville fish and wildlife expenditures prior to 1978 are not included in the report.

While the Council reports on Bonneville's fish and wildlife expenditures, the report also notes the confusing state of fish and wildlife data collection and reporting in the Columbia Basin. The Council believes this must improve, and when it does the accountability to the public for the Council's program and Bonneville's expenditures will improve as well by making results more accessible not only to specialists, but also to the public at large. Thus,

this inaugural annual report of the fish and wildlife program is an important step in developing even higher levels of public understanding about the fish and wildlife program, on the one hand, and enhanced accountability to the public for Bonneville's expenditures, on the other.

The report is available on the Council's website, [www.nwcouncil.org](http://www.nwcouncil.org), as Council Document 2001-02.

## **PUBLIC INVOLVEMENT**

One of the Council's primary tasks is to fulfill the directive of the Northwest Power Act to inform and involve Northwest citizens regarding regional energy and fish and wildlife issues and the Council's activities. Section 2(3) states a purpose of the Act is "to provide for the participation and consultation of the Pacific Northwest states, local governments, consumers, customers, users of the Columbia River System (including federal and state fish and wildlife agencies and appropriate Indian tribes) and the public at large within the region" in the Northwest's planning for electrical power and protection of fish and wildlife resources. Section 4(g)(1) of the Act requires the Council to develop "comprehensive programs" to ensure public involvement and to "inform the Pacific Northwest public of major regional power issues."

To involve the public, the Council arranges consultations and public hearings to discuss and explain key issues and also gathers public comments at these meetings and through mail, e-mail and telephone contacts. To inform the public, the Council produces a newsletter as well as special informational materials, media briefings and several types of news releases. The Council also regularly updates its website ([www.nwcouncil.org](http://www.nwcouncil.org)) and uses other approaches to inform interested citizens about fish, wildlife and energy issues. The Council conducts all its regular meetings, committee meetings and working sessions in public.

## **FISCAL YEAR 2001 COUNCIL BUDGET**

In 1997, the Council committed to making budget cuts totaling approximately \$5.4 million over four years, Fiscal Year 1998 through Fiscal Year 2001. At that time, it was anticipated that the Council's role would diminish in power planning and fish and wildlife program development. It was predicted by many that by 2001, electricity industry restructuring would be nearly complete and federal action on Endangered Species Act listings for salmon would supplant many other fish and wildlife actions in the Columbia River Basin. Many of the Council's budget cuts were based on these predictions.

Instead, the Council's role and workload has increased substantially. Electricity industry restructuring is far from being fully implemented and, as a result, the Council continues to be involved in regional issues of power planning and analysis, energy system reliability/adequacy and conservation resource development. In addition, the Council increased its independent scientific and economic review of fish and wildlife activities and is amending its fish and wildlife program. In short, the Council has an enhanced role and new responsibilities for fish and wildlife recovery.

Increases in the Council's revised budget reflect re-established conservation analysis capability, increased demand for the Council's analysis of regional power system reliability and adequacy, improved fish and wildlife accountability through independent scientific review and enhanced fish and wildlife planning at the basin, province and subbasin levels. Other budget adjustments address program support services and inflationary effects of personnel service costs.

The Fiscal Year 2002-revised budget of \$8,339,000 is \$562,000 more than the current Fiscal Year 2001 budget of \$7,777,000. The major increases for the Fiscal Year 2002 revised budget

were in the central and state offices for fish and wildlife, analysis of power system adequacy/reliability, energy efficiency and renewable resources. The Fiscal Year 2003 draft budget of \$8,425,000 reflects an increase of \$86,000 from the Fiscal Year 2002 revised budget.

## **MORE INFORMATION**

For additional details about the Northwest Power Planning Council's activities, budget, meetings, comment deadlines, policies or bylaws, call 1-800-452-5161 or visit our web site at [www.nwcouncil.org](http://www.nwcouncil.org). Copies of our publications are available at the web site or by calling the toll-free number above. All Council publications are free.

## **COMMENTS OF THE BONNEVILLE POWER ADMINISTRATION**

*Comments on power issues (Pages 8-15):*

While the Council's report notes an improvement in power supply adequacy for the coming winter period, Bonneville remains vigilant. The regional transmission grid still suffers from constraints that have stressed the reliability of the grid, limited access to existing generation, potentially prevented the integration of new planned generation and threatened to expose the system to rolling blackouts during outages and extreme weather conditions.

Little transmission has been built since 1987. The primary constrained paths are the Northern Interconnection, Cross Cascades North, North of John Day, West of Hatwai, Cross Cascades South, West of McNary, and Northwest to Idaho paths. The Northern Intertie is increasingly constrained because of increased generation and the load curtailment associated with the buy-down of industrial load in the Puget Sound area.

Operating studies modeling these constraints have been performed, and operating procedures that include curtailment of firm loads, if necessary, have been developed to ensure safe and reliable operations.

Buy-downs of Direct Service Industry (DSI) load have a moderate effect on our ability to import power into the Northwest from California during outage conditions. This reduction in load also affects transfer capability from Montana into Washington. Remedial action augmentation of a direct trip signal to a large Colstrip (Montana) unit and lower ambient temperatures in the winter should help alleviate constraints.

Bonneville is proceeding with major transmission infrastructure additions to alleviate known constraints, integrating new generation and maintaining system reliability. As new generation capacity is added in the region to keep pace with demand, the transmission grid must grow with it in order to be able to deliver generation to the loads.

*Comments on the Council's recommendation to establish a mitigation fund from a portion of the revenues resulting from decreased spill at Snake and Columbia River dams in 2001 (Page 17):*

Several factors came together to allow the 2001 Voluntary Load Reduction Program - Columbia Basin to be successful. These were (1) low prices for crops grown in the Columbia Basin, (2) a drought that caused a desperate need for water for hydroelectric generation and (3) high purchased power prices. The program was successful this year because Bonneville valued the water for hydroelectric production at a high rate, given the high power prices. Also, because crop prices were low, irrigators lowered their proposed values for those crops. This allowed Bonneville to offer a high enough price to irrigators to make it financially viable for them to forgo a season of irrigation on their crops.

For Bonneville to successfully sponsor another such program in upcoming years, the same three factors must be present or the program will have little success. For 2001, we offered farmers \$330 for each acre they ceased watering. If the current power prices remain stable through next spring, Bonneville would not have incentive to offer as high a price next year. Further, crop prices have generally increased

over the course of this year. Thus, it is doubtful whether Bonneville and irrigators could agree on a price for such a program next year. Bonneville expended approximately \$30 million on the VELR-Columbia Basin program in 2001.

*Comments on the Council's recommendation that Bonneville should continue purchasing water from all available commercial sources, including irrigated agriculture, and that these purchases should include instream protection for water not pumped, consistent with state and federal law (Page 17):*

The Council recommended that Bonneville “include in-stream protection for water not pumped.” This is impracticable to a large extent. Water pumped from Banks Lake to supply water to Columbia Basin irrigators is covered by water rights held by the Bureau of Reclamation. These water rights also cover the generation of power at Grand Coulee. Thus, if water is not diverted for irrigation, the water is still “used” under the permit for power generation. Once the water is “used” under the water right, Reclamation has no control over downstream water uses. Given the level of diversions below Grand Coulee, Bonneville can be reasonably sure that the VELR program saved water will also travel through generators at Chief Joseph Dam, but given the large number of diversions downstream from Chief Joseph, it would be difficult to assess the amount of power the VELR program water generates farther down stream.

In 2001, Bonneville signed an acknowledgement with Washington Department of Ecology (WDOE) recognizing that they intended to use a certain amount of water from the Columbia River to provide water to irrigators with interruptible water rights downstream from Chief Joseph. Bonneville explained to WDOE that neither Bonneville nor Reclamation had rights to this water, but that we could deem the increase in flow from the Columbia River a result of the VELR-Columbia Basin program. Normally we would have anticipated this water to otherwise travel downstream to other fed-

eral hydroelectric projects, so WDOE compensated Bonneville for this anticipated loss in downstream generation. However, no one could be sure of the final destination of any specific molecule of water “saved” from the Grand Coulee irrigation diversion.

**(Insert Letter from Bonneville Here)**



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