

**Northwest Power and Conservation Council  
Meeting Summary  
December 15, 2021  
Portland, Oregon – Webinar**

Council Chair Guy Norman brought the meeting to order at 8:30 a.m. Council Members Jeffery Allen, Doug Grob, Ginny Burdick, Patrick Oshie, Jim Yost, and Mike Milburn joined the webinar. The next Council Meeting is scheduled for January 12, 2022.

**Reports from Committees**

**Fish and Wildlife Committee**

Member Allen, Fish and Wildlife Committee Chair, reported on the Strategy Performance Indicator Workgroup meeting held on December 13, 2021 and the Fish and Wildlife Committee held on December 14, 2021.

**1. Strategic Performance Indicators Meeting**

The Fish and Wildlife Committee held their 4<sup>th</sup> Strategic Performance Indicators Meeting. These meetings have been well attended, and Member Allen noted that he is encouraged by the participation from fish and wildlife managers and the great work of Council staff to track and improve the reporting on performance of the Program. The tools the Committee is making available online are going to be helpful to the public in terms of seeing how ratepayer dollars are used and what the Council is accomplishing with its fish and wildlife mitigation efforts.

**2. Presentation of Remote Sensing Tools for Habitat Assessment, Restoration Planning, Monitoring and Evaluation**

Representatives from the U.S. Geological Survey, Washington Department of Fish and Wildlife, and Cramer Fish Sciences gave a presentation on new tools and technological advances in remote sensing and habitat restoration work. Member Allen noted that these tools and advances will make it easier to identify and predict the outcomes of projects in a safer and more cost-effective manner.

**Power Committee**

Member Oshie, Power Committee Chair, reported on the Power Committee Meeting held on December 14, 2021.

## **1. Changes in Forecasts of Economic Drivers**

Manager of Economic Analysis Massoud Jourabchi presented a review of changes in forecasted economic drivers used in the draft 2021 Power Plan modeling between 2018 to 2021 including population growth, employment growth, and output from manufacturing and agriculture. The purpose of this review is to determine if the changes in the economic drivers are significant enough to warrant rerunning the models and including the new load forecast in the Power Plan. The analysis shows that 2021 demographic and economic drivers are projected to be lower than the 2018 drivers used in the development of Draft Plan. Long-term loads are expected to be lower by about 5% compared to the Draft Power Plan. Since the magnitude of the change in loads between 2018 and 2021 is within the range of uncertainty in the Council's modeling work, the recommendation from Council staff, with the agreement of the Power Committee, is to continue to use the Draft Plan load forecasts.

## **2. High Level Summary of Comments Received**

Member Oshie gave a brief overview of the public comments received during the comment period for the 2021 Draft Power Plan. Member Oshie mentioned that the predominant subject matter (66 of the 178 comments received) involved the future of the Snake River Dams. Other key issues included resource adequacy and strategy, energy efficiency targets and their impact on cost-effectiveness calculation, greenhouse gas policies and decarbonization, planning for extreme events impacting grid resilience, hydro operations, natural gas used as fuel, and the need to study transmission resources.

Fish and Wildlife and Power Committee meeting materials for December 2021 can be found here: <https://www.nwcouncil.org/meeting/council-meeting-december-14-2021>

## **Council Meeting Agenda Items**

### **1. Presentation by Independent Scientific Advisory Board (ISAB) on Three Reviews of Salmon Survival Analyses**

Members of the ISAB, Stanley Gregory, Ph.D., and Kenneth Rose, Ph.D., presented conclusions from three reviews of salmon survival analyses. Together, these reviews identify progress made, remaining uncertainties, and opportunities for synthesis to learn more from existing data through coordinated analyses.

*Dam Bypass Selectivity Report: Review of Analyses of Juvenile Fish Size Selectivity in Dam Bypass Systems and Implications for Estimating and Interpreting Fish Survival ([ISAB 2021-1](#); April 12, 2021)*

For this report, the ISAB reviewed scientific findings and subsequent dialogue associated with two published papers (Faulkner et al. 2019, Storch et al. 2021) that investigated fish size selectivity in juvenile bypass systems and its implications for estimating and interpreting juvenile salmonid survival. It has long been observed that juvenile salmonids that encounter multiple juvenile bypass systems during downstream migration return as adults at a lower rate, on average, than those that have fewer bypass encounters. Two, non-mutually exclusive, hypotheses have been suggested to explain this phenomenon: 1) bypass systems impart damage or stress that results in mortality, but not until the fish have completed passage through the hydropower system; 2) bypass systems select for individuals that are smaller or have other characteristics that result in a survival disadvantage regardless of passage routes at dams. Addressing the issue of effect of passage history on ocean mortality is important because the current management strategy of maximizing spill is designed to route fish away from bypass systems.

The ISAB found the publications and analyses were reasonable and scientifically sound but ultimately did not provide definitive conclusions on the two hypotheses. The analyses and data advanced the scientific discussion and provide an opportunity to better understand the role of body length in how the fish use the bypass system. This information may clarify the effect of length on bypass usage and perhaps, return probability. If size-selection affects bypass probability, then there may also be an opposite effect on powerhouse passage probability, which suggests the need for further analysis.

*Comparison of Research Findings on Avian Predation Impacts on Salmon Survival ([ISAB 2021-2](#); April 23, 2021)*

This ISAB report examines similarities and differences in the conclusions and management implications of the following two publications on Columbia River Basin steelhead trout (*Oncorhynchus mykiss*): “Avian predation on steelhead is consistent with compensatory mortality” (Haeseker et al. 2020) and “Measuring the additive effects of predation on prey survival across spatial scales” (Payton et. al 2020). These papers analyze the extent to which avian predation is additive or compensatory. At their extremes, (completely) additive means that changes in predation are reflected in one-to-one changes in the overall survival of a population, whereas (completely) compensatory means that other life cycle factors operate to negate or counteract the effects of predation so that long-term survival is unaffected by the predation in question. More often in nature, partial additivity and compensation are observed rather than the extremes of complete additivity or compensation. Results of analyses examining compensatory versus additivity in survival can strongly affect decisions about future regional management actions designed to reduce avian fish predators, for example, hazing, re-locating, and culling.

While the studies were conducted in different basins and employed only partially overlapping time series, the ISAB concluded that, despite these differences, the two studies are not inconsistent in their results. Both studies looked at mortality during the

estuarine/marine phase and concluded that predation is either largely (Payton et al.) or fully (Haeseker et al.) compensatory. Only Payton et al. assessed smolt survival during in-river migration, and there appears to be strong additivity of predation for this life history phase. Results of both studies are consistent with the possibility of low-level partial additivity of predation effects on smolt-to-3 adult returns (SAR). For populations at risk, avian predation that is partially additive could affect population sustainability.

A major question for management is whether an increase in SARs is worth the cost of suppressing avian predators or is critical to the support of ESA-listed salmonid species. Answering these questions requires estimates of the magnitude of avian predation effects as well as estimates of the degree of additivity or compensation, and also requires consideration of social concerns, cost effectiveness, and ecosystem consequences of avian control actions ([ISAB 2019-1](#)). Important future steps include reconciling results from these studies in a side-by-side analysis, evaluating additional methods for obtaining predation effect size from tagging data, and incorporating these into life cycle models for different species and populations. The findings of strong additivity of predation for the in-river portion of steelhead life histories and possible low-level partial additivity of predation on SARs warrant further research and careful consideration of possible management actions.

*Review of the Coast-Wide Analysis of Chinook Salmon Smolt to Adult Returns (SARs) by Welch et al. ([ISAB 2021-3](#); June 29, 2021)*

This ISAB report reviews the Welch et al. (2020) paper "A Synthesis of the Coast-wide Decline in Survival of West Coast Chinook Salmon" that examined time series of annual smolt to adult return (SAR) values for many West Coast Chinook salmon populations. The analysis of Welch et al. (2020) highlights the generally low SAR values of Chinook salmon that have occurred along the West Coast recently, and the paper calls into question the view that Columbia River SARs are anomalously low. Their publication raised questions about the general efficacy of hydrosystem passage and freshwater habitat actions because of some of their broadly stated conclusions. Most importantly, they concluded that changes in freshwater habitat would have little impact on SARs and therefore have only small effects on Chinook salmon populations, a finding which could have major implications for how salmonids are managed in the Columbia River Basin. The ISAB also considered a review of the Welch et al. (2020) paper by the Fish Passage Center (FPC 2020) and Welch et al.'s (2021) response to the FPC review.

Welch et al. (2020) conducted simple analyses of the assembled SAR time series data and reach a series of conclusions – some supported by the analysis and some not supported. At a coarse resolution, the descriptive observations of Welch et al. (2020) that SARs for Chinook populations are low in the region and the values for the Columbia system are not dissimilar from those of other systems, including those with no dams, are supported by the analysis presented in the paper. The ISAB also agreed with their findings that low SAR values from marine survival affect the realization of long-term population-level benefits of

freshwater 4 management actions. These findings are useful contributions to the wider literature on Chinook survival patterns and for informing management.

However, Welch et al.'s conclusions involving causal inferences, for example about the effectiveness of freshwater habitat initiatives (management actions), are not adequately supported by the evidence. Such conclusions therefore should be considered speculation, especially when interpreted for individual populations. Moreover, inferring management implications based on their results alone would be premature. In particular, the degree to which freshwater mortality during juvenile migration influences SAR values varies across populations has not been determined by the Welch et al. (2020) analysis. One cannot directly compare SAR values to infer how freshwater survival differs among populations without making major unsupported and untested assumptions, for example, assuming that marine survival is constant across populations.

The Welch et al. (2020) paper adds to other evidence for the need to further investigate SAR values across populations and to continue investigating oceanic and freshwater contributions to low SARs as a critical uncertainty in the basin. The ISAB offers recommendations for further analyses of coastwise SARs to increase our understanding of their temporal trends and broad spatial patterns throughout the region.

Presentation materials are posted with this summary here:

[https://www.nwcouncil.org/sites/default/files/2021\\_12\\_1.pdf](https://www.nwcouncil.org/sites/default/files/2021_12_1.pdf)

## **2. High Level Summary of Comments Received on the 2021 Draft Power Plan**

Director of Power Planning Ben Kujala provided a brief summary of the public comments received during the comment period for the 2021 Draft Power Plan. For this presentation, the main concerns raised in the comments were simplified and combined into key themes and points of concern.

### **High-Level Themes from the Comments**

- A potentially (in)adequate resource strategy when considering the major load impacts of decarbonization
- Regional system adequacy, particularly from the effects of resource retirements and replacement by renewables
- The conservation target
  - Analysis does not fully capture the benefits of conservation and therefore the target should be higher
  - Target is appropriate, though cost-effectiveness should be based on the upper-end of the range
- Value and role of energy storage is not fully captured; storage should have a greater role in the power plan resource strategy (adequacy, capacity)
- Over-reliance on the flexibility of the existing hydropower system and the effects on

fish and wildlife; if constrained further than anticipated in the resource strategy, what else is needed to maintain resource adequacy (e.g., more of other resources)

- Analyzing the effects on the resource strategy if the Lower Snake Dams were removed
- Comments that the Council should and should not recommend removal of the Lower Snake River dams

## **Demand Forecast**

### *Climate Change*

- Include a robust discussion and analysis on planning for extreme and outlier climate events that could have a significant impact on grid resilience and resource adequacy such as
  - Impacts from severe storms
  - Peak and energy needs in during extended extreme temperatures
  - Wildfire impact on the transmission system
  - Costs to mitigate adverse climate effects on power system

### *Decarbonization*

- The draft plan does not fully incorporate reasonable decarbonization and electrification assumptions and thus doesn't call for sufficient resource additions
- The plan should account for Oregon and Washington's more aggressive greenhouse gas regulations
- The plan should account for regional utilities' resource planning to achieve decarbonization goals
  - emphasize the potential for significantly more investment in resources and infrastructure to achieve decarbonization
  - incorporate results from the early-coal retirement and partial decarbonization scenario studies that better match the assumptions in many regional utilities' planning for decarbonization

### *Greenhouse Gas Policy*

- The plan should modify how the pathways to decarbonization analysis is focused, incorporated and considered.
- The plan should clarify and update assumptions relating to current and future greenhouse gas policies
  - Update assumptions to reflect the Oregon HB 2021 (100 percent clean) and Washington SB 5126 (Cap and Trade)

### *Transportation*

- The baseline modeling assumptions underestimate the impacts to the system from rapidly emerging transportation policies in Washington and Oregon
- The load forecast from the High Electric Transportation Case is more realistic than the reference case

## **Regional Reserve & Reliability Forecast**

### *Resource Adequacy*

- The plan's analysis on resource adequacy is not sufficiently vetted and should be heavily caveated or removed with a recommendation to take up further work on adequacy after the completion of the plan.
- The plan's recommended resource strategy significantly understates the amount of resource needed to maintain an adequate regional power supply.
- For future power plan cycles, examine whether continued resource adequacy work by the Council is necessary now that resource adequacy is being addressed through the Western Resource Adequacy Program (WRAP).
- The plan should encourage BPA and other utilities to participate in the WRAP.
- The Council should consider adjusting (lowering) its baseline resource buildout outside of the region to be more reflective of other region's policies and forecasts.
- The plan and supporting material should supply more detail on the Associated System Capacity Contribution (ASCC) methodology, especially since the Council's estimates for wind and solar ASCC are higher than estimates by other entities.

## **Conservation Resources & Program**

### *Conservation*

- Conservation (EE) level (target) should be higher
  - Numerous comments recommend greater levels of conservation needed in the Resource Strategy
  - Underestimating system needs such as from the impacts of decarb or loss of generation etc.
  - The current target is half of the 7th Plan target; EE infrastructure and programs will suffer as a result
- Conservation cost-effectiveness
  - 1000 aMW should be the cost-effective level, but the regional target should remain as the 750-1000 range
  - Initiate a process to re-evaluate its cost-effectiveness methodology for EE
  - Not fully capturing all benefits (would result in a higher target)
  - Include more Non-Energy Impacts in the cost-effectiveness (especially for equity)
  - More quantification of environmental benefits of EE 12 Conservation (2)
- Target is appropriate or too high
- Point target instead of a range
- Shortfall of EE acquisition and utility-specific targets
  - Council should take action for not meeting the 7th Plan targets
  - The plan should explicitly outline what cooperative actions the region, the Council, and Bonneville should take to address a future shortfall in EE acquisition and set forth the conditions that trigger these actions
  - Council should set utility-specific EE targets and propose a surcharge for those that miss the target

## **New Generating Resources**

### *Renewables Build*

- The 3,500 megawatts of renewables by 2027 in the draft plan's resource strategy is:
  - Too low/not enough
  - Too high/unrealistic/would take up too much land
  - The overall resource strategy understates the amount of resources needed to maintain an adequate system, especially considering upcoming thermal retirements
- The plan should include consideration for land use and habitat requirements and impacts of siting new transmission and renewable resources

### *Generating Resource Wrap-Up*

- The plan resource strategy should specifically recommend new:
  - Energy storage
  - Distributed generation (e.g., rooftop solar)
  - Geothermal energy
  - Nuclear; Small modular reactor (SMR) nuclear and natural gas + carbon capture and sequestration
  - Pumped storage
  - Offshore wind and ocean energy resources
  - Anaerobic digestion (biogas)
- The plan resource strategy should specifically not recommend new:
  - Nuclear
  - Natural gas 16 Generating Resource Wrap-Up (2)
- The plan should include a deeper analysis on emerging technology resources which could become viable and even vital in the plan horizon
  - The plan should use offshore wind as the emerging tech proxy resource
- The plan should recommend getting rid of existing:
  - Nuclear
  - GHG-emitting resources
- The plan should include R&D items on
  - Batteries
  - Ocean & wave energy technologies
  - Electrolytic hydrogen production as a grid-level energy storage, a resource to support ancillary services, and transmission redispatch

## **Demand Response**

### *Demand Response*

- Plan should require more DR and/or have an explicit target for DR
- Additional DR comments are than plan should recommend:
  - All non-residential customers be moved to time-of-use
  - Utility implementation of electric vehicle-to-grid capabilities
  - RTF incorporate equity metrics into DR (and EE) measure analysis



## **Existing Generation**

### *Lower Snake River Dams (mentioned in 66 out of 178 comments)*

- The plan included many comments regarding the Lower Snake River dams including:
  - The plan should include a scenario that examines removal of the dams – Commenters included CRITFC, Washington State Energy Office, Washington Department of Fish and Wildlife, Idaho Conservation League, Idaho Rivers United, Columbia Riverkeepers, and many individuals
  - The plan should recommend removal of the dams – Commenters included Idaho Conservation League and many individuals
  - The plan should recommend the dams be preserved as an important part of the system – Commenters included Oregon Municipal Electric Utilities, Salmon River Electric Coop, and some individuals
- Some comments went in the opposite direction encouraging the Council to maintain the draft plan’s current approach of not engaging in analysis of the Lower Snake River Dams

### *Hydro Operations*

- Concerns around assumptions of flexibility within the FCRPS and Mid-Columbia PUD dams related to fish constraints
- Plan should include scenarios with differing operations
- The plan should update hydro operations to match the most recent spill agreement for the Federal Columbia River Power System. It also does not consider effects of potential future changes to fish and wildlife hydro operations.

### *Natural Gas*

- Appreciate the effort to include of upstream methane emissions, continue to update the assessment of upstream methane emissions - consult with both industry and scientific experts
- The Plan understates the potential for renewable natural gas use in the region
- Council should revisit its natural gas price forecast to ensure that the 2021 Plan adequately captures the risk of higher gas prices on the identified resource strategy
- Reject new natural gas plants and new building use in the Plan

## **Methodology for Determining Environmental Cost & Benefits of New Resource**

### *Methodology for Determining Quantifiable Environmental Costs and Benefits*

- We received several comments concerned that the methodology does not adequately capture the entire scope of environmental costs and benefits of various resources
- Consider quantifying costs and benefits (beyond those that are known and already included) and incorporating into the analysis (e.g. considerations of fish and wildlife habitat, non-energy impacts for energy efficiency measures)

## **Bonneville**

### *Bonneville Power Administration*

- Uncertainty in amount of market exposure needs to be explored further and plan should be clear on BPA's role in a potential RTO
- Differing thoughts on 36% assumption of Bonneville's portion of regional energy efficiency target
  - Lowering percentage from historical 42% will negatively impact small, rural customers that entirely depend on BPA for efficiency funds
  - Percentage is greater than percent of load estimated (drops to ~32%)
- Recommend BPA incorporate equity in programs and operations

## **General & Other Comments**

### *Transmission*

- The plan should include an integrated review of transmission and generation expansion and/or commit to pursuing that analysis in the next plan
- The plan should include more explanation and discussion about transmission and distribution system elements that are not part of the planning and analysis process and should provide further explanation of how these omissions impact the resource selection process

### *Equity*

- We received several comments in support of the work done thus far around equity (e.g., system integration forum on DEI in power planning), with a variety of commenters urging the Council to expand the emphasis
  - Equity should be considered and quantified as an impact (cost or benefit) to energy efficiency and generating resources
  - Consider the recommendations and findings from the forum and integrate them into the Council's work

### *Electricity Markets*

- Plan should recommend the region integrate piecemeal efforts on markets and adequacy and move toward a comprehensive regional solution, e.g. form an ISO/RTO
  - The plan should be clear if it recommends BPA participate in the establishment of an RTO
- The plan should alter its approach to the baseline conditions in the treatment of resource expansion outside the region

### *Action Plan*

- The plan should include an action plan
- The action plan period should be extended to 2030

In considering the comments going forward the Council will use the provided summaries as tools but be referencing back to the full detailed comments to make sure they are given full

consideration. Any staff recommendations on responding to comments will be covered at the January meeting including, where appropriate, recommending edits and additions to the Plan document and supporting material.

Chair Norman asked for clarification regarding commenters' concerns about the Plan's assumptions of baseline resource buildouts outside the region and what those assumptions were in the Draft Plan. Kujala said that the current resource strategy is to take policies that have been passed in the different states and look at what it would take using current technology to comply with those policies. It assumes that there won't be a massive change in the relative cost of the technologies, and there won't be a new technology developed that changes the equation. This strategy leaves the Draft Plan showing a very large renewable build outside the region. The underlying assumption is that when states make laws and policies, they are going to find a way to adhere to them to the best of their ability.

All comments received are public and can be viewed here:

<https://app.nwcouncil.org/energy/powerplan/2021/comments/>

Presentation materials are posted with this summary here:

[https://www.nwcouncil.org/sites/default/files/2021\\_12\\_2.pdf](https://www.nwcouncil.org/sites/default/files/2021_12_2.pdf)

### **3. Process for Updates Between Draft and Final Power Plan**

Kujala and General Counsel John Shurts discussed the process for updates and timeline for finalizing the 2021 Power Plan with Council Members.

Kujala said that In January Council staff will conduct an in-depth review of the comments received during the comment period, consider recommendations for changes to the Draft Plan and/or supporting materials based on the comments, and present these recommendations to the Council. Making these changes will be an iterative process between the Power Committee and full Council.

Shurts added that Council staff will complete a written document capturing comments, considerations, and responses in more detail. Following this, recommendations for changes to the Draft Plan will come from both Council Members and staff. Even though the comment period is over, Council Members and staff can continue to engage in discussions outside of the Council about the comments and considerations for changes to the Draft Plan provided the discussions are documented for the administrative record. When the administrative record is complete, there will be a point when Council Members and staff cannot engage in discussions outside of the Council about the Plan, the "go dark" period. Council staff recommended that this "go dark" period begin on January 18 and proposed that changes are complete and the Plan finalized by February. These are self-imposed dates not set in statute, and they can be changed if the process requires it. Chair Norman asked the Council

Members if they were opposed to the date of January 18 proposed by staff. None were opposed.

Member Oshie commented he doesn't want the Council to create a false expectation that the Plan will be complete by February considering the process they must undertake. Vice-Chair Grob echoed this concern citing public anxiety about the new model and the paradigm shift noted in the Plan. Shurts reiterated that the February deadline is self-imposed and not a statutory deadline.

Chair Norman stated that the Council agrees to adopt the self-imposed January 18 deadline for ending communication relative to comments on the Plan and the self-imposed, tentative February adoption of the Power Plan by the Council. He restated that given the extent of the comments and other concerns raised by Council Members that it may take more time and there is opportunity to make adjustments if they choose.

Presentation materials are posted with this summary here:  
[https://www.nwcouncil.org/sites/default/files/2021\\_12\\_3.pdf](https://www.nwcouncil.org/sites/default/files/2021_12_3.pdf)

### **Recognition of Peter Cogswell**

Council Members and staff took time to recognize and thank Peter Cogswell as he transitions out of Bonneville Power Administration after 11 years. He was described as transparent, easy to work with, and a master of navigating difficult issues. Cogswell emphasized the Council's influential role and positive impacts in the region and expressed his appreciation for the great working relationships and friendships made while working with Council Members and staff.

## **4. Council Business**

### **Council approval of the November 2021 Council Meeting minutes**

Vice-Chair Grob moved that the Council approve for the signature of the Vice-Chair the minutes of the November 17, 2021 Council Meeting held in Portland, Oregon via webinar, as presented by staff.

Member Oshie seconded.

No discussion.

Voice vote – all in favor, none opposed.

Motion was approved.

## **Motion to Release the Draft Annual Report to Congress for FY 2021 for Public Comment**

Vice-Chair Grob moved that the Council approve the release of the draft Annual Report to Congress for Fiscal Year 2021 for a 90-day public review and comment period, as presented by staff.

Member Allen seconded.

No discussion.

Voice vote – all in favor, none opposed.

Motion was approved.

## **Independent Science Advisory Board (ISAB) Appointment Discussion**

Independent Science Manager Erik Merrill discussed the appointment of Desiree Tullos and the term renewal for Thomas Quinn to the Independent Scientific Advisory Board with Council Members. Merrill gave an overview of the ISAB appointment process and background on the experience and expertise of Tullos and Quinn. Chair Norman mentioned that he plans to support these recommendations.

## **Public Comment**

Scott Levy, host of bluefish.org, referenced Chapter 19 of the 7<sup>th</sup> Power Plan and presented a graph showing an estimated 44 million metric tons of CO<sub>2</sub> annual sequestration as a potential from Idaho's forests that would arise from the recovery of salmon and steelhead due to the proposed removal of the Lower Snake River Dams. There were intermittent technical difficulties during the public comment.

Chair Norman adjourned the meeting at 11:24 a.m.

Northwest Power and Conservation Council meeting materials for December 2021 can be found here: <https://www.nwcouncil.org/meeting/council-meeting-december-14-2021>