

James Yost
Chair
Idaho

W. Bill Booth
Idaho

Guy Norman
Washington

Tom Karier
Washington



Northwest Power and Conservation Council

Jennifer Anders
Vice Chair
Montana

Tim Baker
Montana

Ted Ferrioli
Oregon

Richard Devlin
Oregon

Council Meeting via Webinar December 11, 2018 Portland, Oregon

Roll was called by Council Chair Jim Yost. All Council Members were present.

Chair Yost called the webinar to order at 1:00 p.m.

Reports from Fish and Wildlife, Power and Public Affairs Committees

Fish and Wildlife Committee

Council Member and Fish and Wildlife Committee Chair Guy Norman shared three items:

1. Staff provided a briefing on the Fish and Wildlife Amendment process, which is full-Council agenda item. The due date for recommendations is Dec. 13, 2018 and staff provided a schedule for the work going forward.
2. Nancy Leonard, fish, wildlife and ecosystem M&E report manager, reported on the “draft program performance and species status tool,” which was renamed by Council Member Ted Ferrioli as the “program performance and progress tool.” This public outreach tool began last August, and it provides an overview and plenty of detail about what Fish and Wildlife does. It has a completion date of April 2019.
3. BPA provided an update on their first- and second-quarter program reductions, and the final accord budgets for 2022. They will cover the third- and fourth-quarter reductions at the committee meeting next January.

Power Committee

Council Member and Power Committee Chair Tim Baker reported on four, “very important” items:

1. Massoud Jourabchi, economic analysis manager, reported on the State of Electric Utilities 2017. The report looked at regional sales, revenues and prices. This is

important as we follow energy markets in the region and prepare for the next Power Plan, Member Baker said. In 2017, the region's economy continues to grow, employment has increased and the housing sector is recovering. Multifamily construction is up. A colder-than-normal winter and hotter summer pushed electricity sales in the region to their highest levels since 2005. Looking longer-term, the annual growth rate of summer peak continues to outperform the winter peak in annual energy use.

2. A group of utilities and NEEA is conducting end-use load research to better understand what customers are doing with the electricity provided. A group of Northwest utilities are looking at a longer-term study of electricity usage in homes and commercial facilities. Knowing how that electric use breaks down by hour will improve the accuracy of resource planning, said Council Member Tim Baker.
3. Council staff is working on a whitepaper on the value of energy efficiency, an effort that grew from utility general managers talking about their challenges in implementing energy efficiency programs. To pin down the value of conservation, the Council wants to better understand how money flows through the system — from BPA to the customer and then down to the consumer. Given BPA's rate structure, that's a complex endeavor. The Power Committee discussed how the money flows, and how there can be different perspectives on the benefits and challenges of energy efficiency efforts. The full Council will look at the paper in February and will decide on whether to release it for public comment.
4. General Council John Shurts reviewed provisions of the Power Plan and their historical context, and what they mean for creating a new Power Plan.

Public Affairs Committee

Council Member and Public Affairs Committee Chair Bill Booth reported on three items:

1. The Public Affairs and Power Division staffs have been meeting with a consultant to come up with a new look and logo for the Eighth Northwest Power Plan. That should be complete by the end of January.
2. They finished a hydropower brochure based on a paper written by Gillian Charles and Mike Starrett. It communicates the need for increasing the value of hydropower in the region by calling for a West Coast capacity market.
3. Congress is considering a bill on the removal of sea lions from the Columbia River. It has been placed on house suspension calendar, so it may finally get over the goal line. A Vote scheduled for this evening. Hopefully WE will be celebrating this legislation, Member Booth said. It's been a long slog — 11 years. The measure

passed the Senate. Council Member Bill Booth praised the help from the Columbia River Inter-Tribal Fish Commission, Oregon Congressman Kurt Schrader, Washington Senator Maria Cantwell, Idaho Senator Jim Risch, Council Member Guy Norman and Idaho staff member Jeff Allen. Member Yost remarked that's very good news.

1. Briefing on Fish and Wildlife Program amendment process

Patty O'Toole, program implementation manager, briefed members on how they amend the Fish and Wildlife program. She said all recommendations are due December 13. The process was started last May, so the region has had long time to decide what they want to recommend. First, the recommendations will be posted on the Council's website for everyone to see. The public can comment on the recommendations until Feb. 4, 2019.

Next, the Council drafts the Amendments. Staying flexible is a good idea, O'Toole said. It could take members several hours or a few days to get through all the material. While the Fish and Wildlife Committee does the bulk of the work, the full Council isn't off the hook. They still need to read all the recommendations, the comments on the recommendations and stay up to speed on the process. There could be some pieces that the full Council wants to weigh in on early. Any early decisions need to be made by full Council, but the Committee will make recommendations. They will probably reserve Council meeting time starting next month to provide comments in time devoted to the Amendment process.

The Fish and Wildlife Committee will dedicate a portion of its meetings to Amendment tasks. Work sessions could be a few hours or a few days for Committee members. It's done in public. Staff develops the products, synthesis and summaries. We try to read the actual recommendations, and the responses to the recommendations, not just the staff summaries, O'Toole said. Power Committee Members will receive regular updates and things can move pretty quickly.

She recommends that formal voting be held to release the draft program for public review and to adopt the Amendments. Otherwise, they'll look for head nods for most procedural decisions. In addition, a part of the meetings should be reserved for receiving input from the public. Last time, the public took advantage of that. They plan to bring full pieces to the Council in July.

Preparing draft amendments will impact Committee business from January through July 2019 and will impact the full Council at various times throughout the year. It will receive more-focused attention in August.

Member Devlin asked about sorting through the recommendations and whether some will be set aside. O'Toole replied that the Council has to decide what it will adopt, but she

suggests that the Council don't set any aside. We address everything, she said. Sometimes, some issues are very complex and require a lot of work, and some things very simple, such as word changes. They work with the legal team on those. We're focused on outcomes, she said.

2. Council decision on Research Project Review

Lynn Palensky, program manager, discussed a review of 25 fish and wildlife research projects, which represent a diversity of programs from habitat restoration to hatcheries. They will cost \$11.6 million in funding from fiscal year 2018 and 2019 budgets. A total of 125 projects with research components were reviewed, but these 25 are primarily research projects, known as "Big R" projects. They have broad applicability and can inform other parts of the Fish and Wildlife Program. The Council reviews projects proposed for funding by Bonneville to implement the Council's Fish and Wildlife Program.

Palensky thanked Council staff, the Independent Scientific Review Panel (ISRP), state staff, Bonneville staff and sponsors for taking time to participate in the review. It wasn't a full ISRP project review, she said, instead it focused on the progress to date. Each project has a different recommendation going forward. ISRP completed its review last September 28, and no public comment was received. Most of the work will be wrapping up around 2020, which will be time for another check-in and assess next steps.

Member Karier said that when we did the research plan, small projects totaled as much money as the large ones. "Is that what you found, so you reviewed half of the budget and not the other half?" he asked. She said she didn't remember what the cumulative budget is for the small R projects, but it's probable given their number. The research component was smaller in those, so they weren't included in this review.

The ISRP's project review found that 10 met science criteria, 11 qualified (but still had an issue to address), and four were completed or were being phased out. Palensky also provided a full list of ISRP programmatic issues, as well as commendations from the ISRP on the programs.

The different programmatic issues included habitat, hatcheries, information sharing and reporting, and funding expectations. Palensky said the ISRP pulled out complex issues that lend to a regional discussion on research priorities. For habitat, the Committee recommends continuing the current effort of a Council-NOAA-BPA Steering Committee on habitat RM&E. It also recommends expanding to form a workgroup with managers.

Under hatcheries the Committee recommends initiating a dialogue with fish and wildlife managers and hatchery managers on prioritizing questions and tools to address issues such as supplementation, precocious maturation of Chinook and RRS studies.

Member Norman said one interpretation of that recommendation is that the discussion with managers would be broader than just these issues.

The Committee recommends that funding continue until the next review process. Three items that need more discussion include ocean survival of salmonids, the potential for reduction in funding from BPA, and using a U.S. vessel instead of a Canadian vessel (which may require more funding).

Member Norman added that they had an ocean forum with 50 people. There was a lot of interest and good information. He's looking forward to a report on that ocean forum at the next meeting. He also asked about the schedule for the review, versus the budget situation.

Palensky answered that they are in the middle of writing proposals for the mainstem program support review. Brian Burke is working on the scope and that's due at the end of January. Tony: they do have fiscal year 2019 money firmed up for the ocean project. It's the fiscal year 2020 money that could be an issue with a new vessel flag.

Member Devlin said the data we gather from this may be a bellwether for evaluating our programs overall. We'll have to see what improvements or losses we have overall due to ocean conditions.

Karier asked about the dates on the recommendation slides. Palensky said most of the work will be wrapping up around 2020, which will be time for another check-in and assess action from there. All the recommendations point to a review process. Four RRS projects will get a special review. The sponsors provided the end dates.

Palensky reviewed an ISRP table with all the projects and end dates.

Member Booth announced that the sea lion legislation passed the U.S. House by suspension.

Member Ferrioli thanked staff for tracking the results of the research and providing feedback, which in turn helps justify the investment.

Member Karier lauded the passing of the sea lion legislation. He said he sees progress in this particular project review. He said some projects have end dates and that some seem to be far out in the future. He talked about being careful of a program with an infinite loop. Prior reviews seem to have the same recommendations and similar results. Some are 15 years old. We need to get out of that loop, he said, and announced that he would abstain on the motion.

Northwest Power and Conservation Council Motion to Recommend to Bonneville for the Future Review and Implementation of 25 Research Projects

Member Ted Ferrioli moved that the Council recommend to Bonneville implementation of the 25 research projects that were the subject of this project review, along with the programmatic recommendations and project conditions as presented by staff and recommended by the Fish and Wildlife Committee.

Norman second

A roll call vote was held: All members voted in favor of the motion, except for Member Karier, who abstained.

Motion passes.

3. Fish and Wildlife Project Reviews 2019-2021: Categories and Schedule

Palensky provided Members with an update on start of Mainstem/Program Support Category Review process and an overview of upcoming category reviews. It's the first time the Council will see project reviews for 2020-2021. No action is necessary.

She described the different categories and timing:

Mainstem/program support – 2019 (begin fall 2018). This review is limited to 50 projects. The ISRP's review criteria are in the program and the Northwest Power Act. No site visits for this set. They will have presentations starting in February with Council recommendations in August. Palensky provided a detailed timeline.

Resident fish and sturgeon – 2020 (begin fall 2019)

Anadromous habitat and hatchery – 2021 (begin fall 2020) – will entail 168 projects.

All these reviews take about 10 months, she said. The Council uses the ISRP review as a basis for making project recommendations to Bonneville.

For planning purposes and sponsors, it's best to engage managers in the wintertime because it's out of the field season. Each category review starts the same time of year. Hopefully, the Council will recommend moving forward with implementation in August of that year, she said.

4. Briefing on California Energy Legislation Impacts (Part 2)

John Ollis, power system analyst, briefed the Council on the forecasted impact of California's Senate Bill 100, known as the 100 Percent Clean Energy Act of 2018, which was signed into law last September. It calls for 60 percent renewable energy by 2030 and commits to a 100-percent, zero-carbon energy supply by 2045.

Running the data through the production cost model in Aurora, Ollis said there would be a significant renewable buildout on the West Coast with the addition of 145 GW of renewable energy by 2045, almost all wind (101 GW) and solar (44GW). The modeling also called for a natural gas buildout of less than half of what was estimated before SB100 became law, from 46 GW to 21.5 GW.

The model looked at the long-term resource buildout in the WECC with existing transmission infrastructure, demand-side management and load information.

Staff did not look at:

- Forecast transmission system expansion.
- Forecast increased demand-side management measures.
- Forecast load impacts of carbon neutrality goals in Gov. Brown's Executive Order B-55-18.
- Forecast increased reserve requirements associated with higher renewable penetration.

Ollis said that much of the forecasted WECC-wide buildout comes with caveats. This includes:

- California import policies on "clean" and RPS resources (and what transmission expansion would be needed).
- Expanded buildout of conservation and other DSRs is highly likely.
- More reserve requirements and variability of different renewable generation sources.
- Market structure changes may be required.

Staff looked at where planned retirements will be taking place and when. In the next 15 years, WECC is facing 19,000 MW of nameplate thermal retirement. The Pacific Northwest will face greater competition from the Southwest and Mountain West in providing clean energy to California.

In 2038, production costs go down by \$6.5 billion on average. Fixed costs go up by \$10.3 billion.

Looking at regional demand, Ollis said that California has about 31 percent of the average demand (compared to Canada, MW, PNW and SW) and a larger portion (36 percent) of the peak. Discussing long-term expansion, Ollis said that by 2045, 61 percent of new resources

built will be wind, 26 percent solar and 13 percent natural gas. These represent builds for energy, capacity and renewable portfolio standards.

Looking at 2038 generation by fuel type, Ollis said that wind could overtake hydro as largest average megawatt generation source in WECC except in high hydro years. However, wind and solar aren't operating at nameplate all the time. Examining the 2038 generation mix compared to the demand area, Ollis said there should be enough generation to meet demand. The model built enough to satisfy requirements, but you'd still need some coal and gas to satisfy this buildout.

Wholesale power prices drop on average. Two daily ramp periods contain most of the high prices. This is something to keep an eye on, Ollis said. By adding low cost resources, prices stay flat and decline in some areas (although not at Mid-C). Also, there will be more variation from year to year.

What do all these renewables and low gas prices do to the electricity price? Prices in general are flat but the average is increasing. Look at Colorado prices. The amount of wind compared to load has hit a threshold. It's more profound seasonally.

Ollis said the Pacific Northwest sources the largest amount of California imports except in poor hydro conditions. Mountain West imports come through Utah and Nevada and southwest imports come in from Arizona.

Ollis shared some final observations:

1. SB100 significantly effects the buildout in the WECC (100 GW more renewables and 25 GW less gas than the previous policy).
2. In general, wholesale prices and CO2 emissions go from definitively increasing to flat and decreasing respectively.
3. Production costs are 40 percent less than pre-SB100 levels by 2038.
4. The model did not test variability in renewable production nor increased reserve requirements. Both of these factors would likely increase capacity requirements, price and costs.

5. Presentation by Columbia River Inter-Tribal Fish Commission on Predation in the Columbia River Basin: Using Salmon Equivalents for Effective Management.

Members of the Columbia River Inter-Tribal Fish Commission (CRITFC) appeared before the Council to share their work in trying to determine effective ways to reduce salmon predation in the face of conflicting regulations. Speaking were Jaime Pinkham, CRITFC's executive director, and Blaine Parker, Doug Hatch and Robert Lessard.

Pinkham thanked Members Booth and Karier for making a difference for the rivers and for native communities. Pinkham talked about how predation is a natural function that only becomes an issue in times of scarcity. In some cases, predators have an upper hand. He also discussed how law and management strategy conflicts in addressing the issue.

He said guidance documents can be found in *Wy-kan-ush-mi Wa-Kish-Wit* and in the Council's plan. Both recognize predation issues, and both have alignment. Another document is the ISAB Predation Metrics Report. Pinkham said some of the greatest challenges we face is in relevant laws and policies. He mentioned acts of Congress that are in conflict: the Endangered Species Act, Migratory Bird Act and the Marine Mammal Protection Act.

Blaine Parker talked about broad predation issues. He said a small portion of juveniles return as adults to the estuary (5 percent or less). Historically, it takes five days to leave the system, but now it could take five weeks. Mitigating mortality at different salmon life stages is difficult to quantify directly into adult returns. Which is better? Saving five returning adults or saving 100 juveniles? How can we be strategic in choosing management actions?

He talked about northern pike minnow, a common and efficient predator. Exploitation at 10-20 percent could result in a 50 percent predation reduction from the base period on juvenile salmon.

Looking at avian predation, double crested cormorants and Caspian terns on East Sand Island ate a minimum of 23 million salmon and steelhead smolts in 2013. Reading from a slide, he said in 2018, USFWS and the COE now consider their management efforts for these predators at ESI completed. However, avian predator numbers remain substantial and are expanding to new habitats. Systemwide losses on specific stocks (i.e. Upper Col. steelhead) from avian predators ranged from 23 to 40 percent. Impacts from gulls, particularly inland, may exceed that of Caspian terns, however, no management actions are planned for gulls at this time. If Caspian tern predation on upper Columbia River steelhead was eliminated, the resulting SAR value could exceed two-fold.

He also listed the impact of smallmouth bass and walleye on salmon and steelhead.

Doug Hatch talked about the sea lion work being performed by CRITFC. They have been engaged in nonlethal hazing. Boat-based crews work to keep them from fish ladders, where fish are most susceptible to predation. Now we have Steller sea lions as a problem, which affect all stocks of fish, he said.

Robert Lessard talked about the work to develop a common metric to evaluate predation. Where are efforts paying off? We have a few million returning salmon; how much is due to our efforts?

Lessard explained adult equivalent analysis and using the life cycle model. Can we count on saving smolts or will they have died from some other cause? He explained the analysis in trying to determine that. Lessard explained adult equivalent analysis and using a life cycle model, which the Independent Scientific Advisory Board has identified as a priority issue.

Some of the actions that can be taken now by the region are:

1. Developing a common metric for predation assessments and place in context with a life-cycle model.
2. Supporting legislative changes to the Migratory Bird Act and Marine Mammal Protection Act.
3. Rolling back protections for non-native fish in salmon-bearing waters.
4. Funding sea lion removal and effectiveness monitoring efforts.
5. Monitoring all fish runs and evaluating impacts resulting from sea lions downstream of Bonneville Dam.
6. Implementing a common metric approach with life cycle model integration and vet the model within the region.
7. Performing analysis of benefits from various predator control programs.

Member Karier said this is promising research. After the ISRB did their report, this is what we were looking for at the next stage. Dan Roby's research did analysis on whether there's compensation. He did a statistical test on whether the bird numbers correlated with SARs. His conclusion was it wasn't compensative — it was additive. You could reduce birds and have a lot more fish. Are you doing similar work? The short answer is "yes," Lessard said. I would put it in the category of it concludes nearly complete additivity, but on a relatively short time scale. It didn't allow for compensation that could have come about a little bit later. I would call phase 1 an exhaustive review, tabulation and assessment of all levels of predation that were reported, and associate those with relevant runs and SARS reporting groups associated with those. It's a broader predation review than just that one study and that one species.

Member Booth said it's a great start. It's great to see you interacting with the ISAB and I assume you're interacting with state fish and game agencies. In the Snake River system, predation takes about 50 percent of smolts before they even reach the hydrosystem. Do you incorporate that into this modeling? Do you have good data on upriver predation? Lessard said the example was based on Snake River spring Chinook population. I was the study's author. It did not account for variability of predators above Lower Granite Dam.

USGS did a multiyear study of piscivorous predation in the Lower Granite Reservoir. I would want to look into that.

Member Norman thanked CRITFC for their efforts on the sea lion legislation as well. There is enthusiasm to move to the next stage and to be part of the removal effort. About the compensatory studies: one of the focuses is trying to weigh what's most important between juveniles, fish and marine mammals to get the best bang for the buck. How precise do we have to get?

Lessard said Norman touched on the importance of the range of uncertainty. To validate models, we get caught up on trying to fit data. Part of the problem is that predation has been the source of that uncertainty. You're right to ask should we put our efforts into something so uncertain? I would rather invest in something uncertain at a higher rate than the other way around. Strike a balance between the expected outcome and the uncertainty around it.

Member Norman asked, how much additional information do we need to look at birds as the worst for steelhead, and pinnipeds for spring Chinook? Lessard replied that the answers will look like a scorecard by species. Early running spring Chinook benefit a lot from pinniped removal. Avian predation will make a big difference for steelhead. It will be a menu that can be reviewed by stock.

Member Anders commented that a lot of predation efforts are being funded and pursued in the basin without adult equivalent analysis in place. The assumption is that predation is a limiting factor and we should go after it as much as we can. The Council's funding is small compared to other things that we fund. It might be more critical to the region as a whole. It might be ripe for new research if the region would support it.

Member Booth thanked Jamie and CRITFC for helping on the sea lion legislation. Oregon's participation gave us a boost.

Council Business

Northwest Power and Conservation Council Motion to Approve the Minutes of the November 13-14, 2018, Council Meeting

Member Anders moved that the Council approve for the signature of the Vice-Chair the minutes of the November 13-14, 2018, Council Meeting held in Portland, Oregon.

Baker second

Approved without objection.

Comments from retiring Council Members Bill Booth and Tom Karier

Member Karier said he's not sure it will be his last meeting and hopes the governor will find a replacement. He said he served with 27 members, an interesting group of individuals trying to help the Northwest. It's been a real honor to be appointed by the governor to help preserve low rates and an adequate power supply system, he said. Our governor wanted to see lower carbon and see progress in saving salmon. This was a chance to work with some very talented people — at the Council, we have some of the best power and fish and wildlife analysts in the region, he said. Being on the Council is a real educational experience. With this wealth of information, being on the Council is like a graduate seminar every month. It's an opportunity to learn and to turn that learning into action to help the Northwest. When I started had one foot in the university and one at the Council. I went from one day counting fall freshman to the next day counting fall Chinook. I thought about the similarities in that they both ran every four years and there was never enough of them. After 20 years, my thinking has gotten more sophisticated. Instead of thinking about fish in/fish out, I'll be thinking about freshman in/freshman out. I'll be back at Eastern Washington University, and can be reached at tkarier@ewu.edu. Everybody leaves, it's my turn.

Member Norman said that he and Member Karier worked together a long time when he was at Fish and Wildlife. "I always appreciated working with Tom on the tough issues. Appreciated his insights and dedication. He was a good Council Member, good mentor, and I appreciated his service.

Member Booth also congratulated Member Karier as the longest survivor on what we do. If there's a hall of fame, he'd probably be the first inductee. They both share a background in economics, and he wished him the best in the days ahead.

Member Booth continued to say he had his comments last month. It's been an honor and a pleasure to serve with you. I'm proud of my service to Idaho and the region. We've done some good work together.

Public comment

There was no public comment.

Member Yost adjourned the meeting at 4:30 p.m.