

Henry Lorenzen
Chair
Oregon

Bill Bradbury
Oregon

Phil Rockefeller
Washington

Tom Karier
Washington



Northwest Power and Conservation Council

W. Bill Booth
Vice Chair
Idaho

James Yost
Idaho

Pat Smith
Montana

Jennifer Anders
Montana

Council Meeting Boise, Idaho May 10 and 11, 2016

Council Chair Henry Lorenzen called the meeting to order at 1:30 p.m. All members except for Bill Bradbury were in attendance. Member Bradbury joined by telephone.

Reports from Fish and Wildlife, Power and Public Affairs committee chairs

Fish & Wildlife Committee

Council Member Jennifer Anders, Fish and Wildlife Committee Chair, shared six items that were covered:

- The committee discussed how the Cost Savings Workgroup can help the Council identify the allocation of cost savings and how to fund emerging priorities. It identified an additional \$85,000 of additional cost savings to put toward emerging priorities.
- There was an update on emerging priorities. Nancy Leonard, staff's Fish, Wildlife and Ecosystem M&E report manager, briefed the committee on a meeting about quantitative objectives being held later in the day. Lynne Palensky, program development manager, discussed work relating to sturgeon, and the toxics workgroup is scheduled to meet May 16.
- There was a discussion about the NOAA Regional Partnership Workshop. It's an effort to bring together stakeholders in the region to discuss quantitative objectives for salmon and steelhead in the Columbia River Basin. Fish and Wildlife Division Director Tony Grover, Leonard and others shared their thoughts on the May 4th workshop, which included trends for salmon and steelhead, tributary habitat information, ocean and estuary information, and predation.
- Received a thorough report from the Idaho supplementation group, led by Dr. Tim Copeland. The Council will hear the full presentation later in the day.
- There was an update on a revision of the Council's research plan from Patty O'Toole, staff program implementation manager. Tasks include getting feedback from the ISAB and ISRB (now found in the critical uncertainties report), getting public comment on past research, and on developing and identifying priorities. Committee and Council will review a full research plan draft later this year.
- Last, there was a discussion of Fish and Wildlife Division staffing needs. There have

been two vacancies in the last 15 months. They are looking for one senior staff member. The Executive Committee will discuss that during its meeting.

Power Committee

Council Member Tom Karier, Power Committee Chair, reported that the committee heard from Idaho energy experts, including Scott Gates from Idaho Power. A group toured a commercial solar project with 40 MW of AC and 50 MW of DC current. It provided an opportunity to get questions answered. It was the first time they had toured a commercial solar facility during Member Karier's tenure on the Council. Gates talked about residential solar projects, which are growing at a rate of 100 percent a year. They're up to 1,000 customers. The cost is now \$3-\$4 per installed watt. Most are fixed collectors and some are single axis, which can lower the price 20 percent. Karier said they heard about the challenges of integrating it into the grid, including the security and safety issues.

The committee heard from John Chadburn, Idaho Office of Energy Resources, talk about a key transmission line: Gateway West. It starts in Dave Johnson, Wyoming, and ends in Hemingway, Idaho. Another part is Gateway East, which starts in Hemingway and runs to Boardman, Oregon. Both are backbone investments in transmission expansion. It has run into permitting problems as Gateway is on BLM land, and alternatives were chosen. A route was chosen that skirts Snake River's birds of prey area. They also chose a route that hasn't been explored as thoroughly. There's a process to reevaluate whether that's a correct route or not. There's evidence that transmission lines would not have an impact birds of prey. There are lots of things to sort out, which could slow the development of that project.

The committee looked at a report from a major conference on energy efficiency, which takes place annually. BPA and the Energy Efficiency Alliance teamed up and combined their conferences. The Council participates in it. About 400 participants gathered in Coeur d'Alene. Member Karier went for a day and found it impressive. There was a range of people working in the industry, including many young people just out of college, who have a strong passion for this work. The Council's Seventh Plan set the tone for the conference and involved Council staff.

Karier said the Council would be voting on releasing a draft paper proposing the development of a demand response advisory committee. He said that we have advisory committees in most other areas, and we need one for demand response, as it's a growing part of the Plan. We also want to set up a forum that will pull together different advisory committees and look at system integration issues involving demand response, efficiency, generation and other items.

The Council also will vote on a contract to collect data on industrial data research.

Public Affairs

Council Member Jim Yost, Public Affairs Committee Chair, reported that the committee last met in Portland where it reviewed the draft Fish and Wildlife cost report. It goes back four-to-five years, with the same arguments, he said. There will be a full discussion of it in the full Council. They reviewed the Council's Public Affairs staff, which did some repairs and changes on the web page. They're pretty good, he said. Even though they wanted a major

overhaul, the committee decided that we would focus on the RTF web page. They went through the criteria and reviewed some of those who applied to work on it. They will discuss narrowing the field at the Public Affairs meeting later today.

The committee reviewed the August Congressional Staff tour. Washington is hosting and has things well in hand. They're going to Lake Roosevelt, Grand Coulee and Avista.

The committee also reviewed the Public Affairs Division work plan.

1. Council decision on Project Reviews

Mark Fritsch, manager, project implementation, discussed the Step Review for Project #2007-155-00, Develop a Master Plan for a Rearing Facility to Enhance Selected Populations of White Sturgeon in the Columbia River Basin.

Started in 2009, this initiative had three objectives:

1. Develop a strategic framework for sturgeon in the Columbia River;
2. Fold recommendations into a master plan; and
3. Gain Council approval.

There have been four meetings each year. It was presented to the ISRP in 2013 and presented to Council in 2014. CRITFC began working on a master plan, which was presented to the Council in December 2015. On March 16, 2016, it received the ISRP review of the master plan. There were some issues with environmental compliance and preliminary design.

Blaine Parker, project lead with CRITFC, said that the focus is to restore and stabilize sturgeon. They release 30,000 juvenile hatchery sturgeon each year. The reason is for fishery hydro mitigation. Some measures have met with partial success, but if we want improvements over time, we'll have to put some fish in the Basin regularly.

They held a series of workshops. It brought region together to explore concerns people have. Parker said that the rule of thumb, developed by Dr. Paul Anders, states that the higher up the river you go, the more precarious sturgeon populations become. Sturgeon size used to be 150 pounds, and now they are averaging 35 pounds. Lower Columbia River still has the best habitat. Populations decline up river and are currently at very low levels.

Alternatives considered include flow augmentation, hatcheries, transplants, passage, no action and habitat restoration. He said they settled on hatcheries because of its record of success and moderate costs.

They want to enhance fisheries, and to double harvest and abundance. They want to do careful, scientific work, not just dump a bunch of fish into the river. Parker reviewed the Zone 6 Sturgeon Harvest. Without good water years, the population is poor.

He discussed hatchery strategies, different sturgeon populations and abundance, and establishing an integrated program. The Lower Columbia is where most of this project's

work will take place. They will be marking the fish for tracking. They've only been actively studying sturgeon since the mid 1980s.

Parker showed slides of the facility's physical infrastructure.

Member Karier asked what they meant by an integrated program? Parker said it's one that all components melded together to ensure that we have a sustainable population that is in balance with the environment, as well as providing harvest for those fish.

Member Karier said that there are different standards for different types of programs, so you're committed to the HSRG standard? Yes, as best we can, Parker said. Nothing's been written for sturgeon.

Member Karier asked if harvest is selective. Very selective, Parker answered. Both sport and commercial fishing is regulated by guidelines. Fishing can be shut down if those guidelines are approached.

Member Karier asked if in commercial fishing, does that allow for live releases of sturgeon? Yes, it does, Parker replied. "We do our research with commercial-sized gill nets. We use overnight sets. We handle 2,000 to 4,000 fish in the winter and only lose about five."

Member Booth congratulated the staff for fitting the entire motion into one sentence.

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION THAT THE COUNCIL SUPPORT PROJECT 2007-155-00, *DEVELOP A MASTER PLAN FOR A REARING FACILITY TO ENHANCE SELECTED POPULATIONS OF WHITE STURGEON IN THE COLUMBIA RIVER BASIN.*

Member Booth moved that the Council recommend to Bonneville that Project 2007-155-00, Develop a Master Plan for a Rearing Facility to Enhance Selected Populations of White Sturgeon in the Columbia River Basin, proceed to Step 2 of the planning process for major production projects, with the condition that the ISRP qualifications ISRP be addressed as part of the Step 2 submission and with costs associated with Step 2 not to exceed \$450,000, as presented by staff and recommended by the Fish and Wildlife Committee.

Council Member Pat Smith second.
Motion carries unanimously.

2. Council decision on Statement of Basis and Purpose and Response to Comments for 7th Power Plan.

Sandra Hirotsu, senior counsel, presented the final piece of the 7th Power Plan amendment process. She informed members that once the Council approves the Statement of Basis and Purpose and Response to Comments for 7th Power Plan, a notice goes for publication in the Federal Register. That starts the legal time clock with a 60-day window for people to file challenges. The Federal Administrative Procedures Act requires federal agencies that are involved in rule making to allow for notice and opportunity for the public to comment on a proposed rule, and once the rule adopted, to submit a statement of

basis and purpose for the rule.

The document itself isn't a Council policy statement. It's a summary and statutory framework on which the Plan is based. It describes the process the Council went through to develop the Plan, and it summarizes public comments at a very high level. It also addresses how the Council used those comments in shaping the final plan. We also want to highlight how much work the public put into it. It was critical that the Council reached out.

Ben Kujala, interim power division director, outlined the public engagement effort:

- There was a 60-day public comment period on the Draft Plan;
- public hearings were held with over 140 individuals testifying;
- There were more than 500 written comments; and
- Consultations/meetings were held with state energy offices, regulators, environmental and clean energy advocacy groups, energy services providers, utilities and Bonneville.

There also was extensive use of advisory committee expertise. A few ways that the comments influenced the final Plan include the development of future scenarios. They also helped update forecasts on natural gas prices and added resources, in addition to ones in the Draft Plan. Staff also modeled resource seasonality.

Member Smith praised the summary and said that it's good to do through the APA. It's not strictly required, but it's good government.

Member Yost asked if the responses to comments are posted on the Council's website? They will be, Hirotsu said. Yost said he agreed what the document was well written. Member Bradbury agreed that it is a great summary.

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION THAT THE COUNCIL APPROVES NORTHWEST POWER AND CONSERVATION COUNCIL MOTION THAT THE COUNCIL APPROVE THE STATEMENT OF BASIS AND PURPOSE FOR THE SEVENTH POWER PLAN AND RESPONSE TO COMMENTS.

Member Booth moved that the Council approve the Statement of Basis and Purpose and Response to Comments for the Seventh Power Plan, as presented by staff.

Council Member Phil Rockefeller second.
Unanimously approved.

Member Lorenzen announced that the Public Affairs Committee would meet following the Council meeting.

3. Summary of Idaho Supplementation Studies (ISS): Jeff Allen, Idaho Council staff.

Jeff Allen, Idaho Council staff, introduced Dr. Timothy Copeland to present findings from the Idaho Supplementation Studies, a project that was supported by the Council and

funded by Bonneville Power.

The question the study sought to answer was if hatcheries could increase the number of wild fish without reducing their ability to make a living in the wild?

“Can we add fish to a population without making it less resilient? Copeland said. “We measure that by the number of new individuals.”

ISS’s objectives were to supplement spring/summer Chinook populations in Idaho with integrated broodstock.

This study is about the gene flow between the hatchery population and the native population. We looked to determine the effect of supplementation and abundance of natural origin fish, Copeland explained.

Then, we ceased supplementation. We wanted to determine if supplementation reduced productivity of the population in some way, and then develop guidance from that, he said. What would happen if we didn’t do this? That is what gives us the real measure of what the effect is, Copeland explained.

First, they localized first-generation broodstock. He discussed the process of supplementation and crossing those fish with the natural broodstock. He showed how large the study area is in Central Idaho, covering the Clearwater River and Salmon River drainages.

There were three different phases of the project:

1. Studying the population,
2. Making the broodstock, and
3. Supplementation.

Copeland said that the unique thing is they stopped supplementation to evaluate. In the best case, populations would continue at that level. Or they turn it off, and it goes back to the original number. In the worst case, it drops below the reference number. It took several generations to make sure that they did it properly.

He said they measured response at several points in the lifecycle. When you release fish, you need to make sure they put eggs in the gravel, he explained. They counted that and made some estimates on how many natural-origin juveniles left the spawning reaches and moved downstream. They estimated how many of them survived to become a smolt at Lower Granite Dam, and then moved down to the ocean. Of the adult progeny that came back, four and five years later, how many redds did they make per fish that spawned?

When the project started, things were bad and then they got worse. Then they got better. The fish were listed when we began and then the numbers got to the bottom in 1995. He tracked the wild adult salmon crossing the dams, moving into the Snake River Basin and dispersing into Idaho, northeastern Oregon and southeastern Washington. Once we got underway, there was a spike in abundance, then it went down a little again. It has reflected the ocean conditions. It has gone up and down to the present day.

In 1991–1995, they weren't able to make half the treatments to the juveniles. That's because the fish they had to work with were very low. Some streams they wanted to supplement, we couldn't because they didn't have enough fish to initiate the integrated broodstock, particularly in the Clearwater River.

However, adult treatments were made. They were trying to hit the 1:1 ratio. In general, it was a little lower than what they would have liked. We made it about 70 percent of what we were hoping to do. Natural origin abundance was low enough. Supplemented fish weren't returning back from the ocean.

Copeland discussed how many eggs were put in the gravel. There was a lot of variability in the Clearwater and Salmon rivers.

"When we supplemented, we boosted by a significant amount," Copeland said. "When we stopped, it went away. It didn't persist. The results from the ocean were mixed. Some reasons were beyond the control of the study."

Member Karier observed that in Clearwater, there was an unusual event. "What do you think happened, that the supplemented stream collapsed?" he asked.

We lost a few study streams in phase three, Copeland replied. "We lost one of our lower-productivity reference streams.

Ryan Kinzer, with the Nez Perce Tribe, said they were working with about 14 streams in the Clearwater River, and when they went to evaluate progeny, the study design had ended, so we couldn't use those streams in the analysis any longer. So it's an error in the analysis and reflects that those streams dropped out of the data set.

Member Karier said it seems like it's a key result – the adult progeny – and to have it invalidated is unfortunate.

The population improved when they added natural origin fish, Copeland said. Supplementation also had some benefits. Non-treatment hatchery fish didn't have much of an impact. The benefits of supplementation decline as spawners increase. Out of basin effects (such as ocean conditions) drive adult returns.

The basic pattern was:

- They supplemented populations
- We boosted them by some amount
- Once we stopped, that boost went away

Copeland said they can achieve some short-term benefits and the cost was fairly low. Supplementation is a valuable part of an integrated management strategy, but you need to consider all the factors that can impact a salmon population.

The wisdom of using integrated broodstocks is borne out by our report, he said.

Important issues:

- Density may limit supplementation response
- Low SARs during study limit benefits
- ISS tracked population response, not relative reproductive success
- ISS integration approach was consistent with current genetic theory

This study didn't cover genetic work, but it translated into management trends because they focused on population response, Copeland said.

Member Lorenzen said a success has been the reintroduction of fish in the Umatilla River. "What do you think would happen if they stopped?" he asked. "Would there be a steady run of fish returning or would they die out?"

Copeland said that if conditions remained good, they would need to start dialing back supplementation and let the natural environment influence the genetics of the population. You need to have these things ready when the crisis comes, he said. You already have the system built. You already have the broodstock.

Member Karier asked, now that experiment is over, how will you operate in the Snake and Clearwater? Copeland said has been reinitiated as it was built into the *U.S. v. Oregon Agreement*.

Member Karier added, "Even though you found it didn't help in the long run, you're going to continue?"

Copeland replied that he didn't say it wouldn't help. He just said the results changed based on how conditions changed.

Member Karier asked what would be done differently?

Copeland said that the PNI targets are different, but a lot is very similar. The way the language was worded that future efforts will be based on the results of this project. When this project started, the run numbers were very low.

Member Yost explained that the Clearwater system wasn't considered as feasible for salmon or steelhead when this project started. "So when we had an opportunity, we did some major barrier removal and opened up some tributaries," he said. This study was focused on the Crooked River. There are some other areas with much better habitat in the spawning/rearing area. The whole system is flashy. There is very little flow in late summer, but the fish are already up there. With the work we've done there, we think we're opening up a lot of new habitat. But there are a lot of things out of our control, such as how much fish has returned. We haven't been studying it that long, Yost said.

David Venditti, from the Idaho Department of Fish and Game, said they will be supplementing in the future, but they will be using integrated broodstocks in the salmon and keeping the general production stock out of the spawning areas.

Member Booth explained that the committee went into this in quite a bit of detail earlier that

morning. The good news is that things went back to normal, he said. If you have a stream in trouble, you can start things up. On the averages showed, there's a value in all the streams that were analyzed as to why some are doing better and why some are doing worse. "I'd like them to come back after a year," he said. "I'm interested in the variety between streams that did well and those where it didn't work at all."

Member Karier said that in terms of policy, they had just approved a hatchery for sturgeon. "We need to think about how it all incorporates. We spent \$50 million on this, a flagship study, and we need to extract all the information we can."

4. Report from Idaho Department of Fish and Game (IDFG)

Virgil Moore, Idaho Department of Fish and Game director, said that the 24-to-26-year project just discussed shows the importance of having continuity in what they do. He said he's proud of their partnership with the Council.

Moore briefed the Council on two priorities:

1. The Southern Idaho wildlife mitigation program, where they now have a stewardship agreement in place.
2. Identifying O&M funding to address the deferred maintenance of fish screens. The Council identified the need to address this as the top priority. The value of these installations is unquestionable.

We've had Bill Booth's boot in our backside to keep us moving.

Now the challenge is to get the North Idaho wildlife mitigation agreement in place. It is not complete. Clearwater mitigation was taken care of and others, so we're left with the North Idaho piece.

Some other areas include:

Renewal of *U.S. v. Oregon*, the Columbia Basin Treaty, the BiOp and the Columbia Basin Accord. When I hear any of those, I perk up. All are important to the proper management of wildlife in the Basin. At the same time, BPA needs to stay competitive. It has economic leverage. It's Focus 2028 discussions bring to light the need to maintain financial strength and cost competitiveness.

We'll continue to work on the dialogue on Fish Accords. We build the Springville hatchery. The State brokered deals to acquire easements on the Lemhi and elsewhere to benefit fish.

The importance of long-term monitoring is always a topic of interest, he said. We need to try new things while doing the ongoing monitoring with the limited budget we have. Research should be hypothesis-driven and time-bound.

Monitoring for research is different. BPA has invested tremendous amounts in long-term monitoring. And it is paying dividends in meeting ESA responsibilities. It will need to be maintained. It's not just for fish and wildlife. Sage grass is another critter. We got a five-year reprieve from listing. It was some of the lessons we learned relative to monitoring. We put those things together in plans.

That funding amounts to \$180 million annually to implement it across 11 states.

We kept the Yellowstone cutthroat off the list because of conservation strategies in place at that time. It took monitoring and evaluation on an annual basis.

On delisting, that last hurdle is more difficult to achieve than I thought, especially concerning with bull trout.

On predator management, we share the Council's concerns about non-native invasive species such as Northern pike, lake trout, walleye and small mouth bass. Introductions are illegal, but it's nearly impossible to eradicate, but not to manage.

Member Booth said that Moore deserves credit for his leadership in the Southern Idaho Wildlife settlement. The agreement provided some new monies for acquisition, and it provided an endowment fund that would be invested and fund the O&M of Idaho's wildlife mitigation lands in perpetuity.

Member Karier asked about the North Idaho settlement Washington has looked at examples in Oregon and Idaho. What about the tribes' role? Is there a possibility of a global settlement or will it be party by party?

He can't say for sure, Moore replied. But North Idaho agreement will be different than the southern. There are more tribes involved. We worked to include the tribes in this agreement. We're working to define parameters. The southern Idaho model probably will not work up there.

Member Rockefeller thanked Moore for letting Huntsworth come over to run Washington's Department of Fish and Wildlife. He noted that Idaho has been a leader in preventing the spread of invasive Quagga and zebra mussels. Our state can follow your lead on that, he remarked.

Member Rockefeller next asked about the stewardship endowment fund. What investment strategy has he followed and where do they look to build up returns for that retired acct?

We've accessed the state's endowment fund that's independently managed. We use those long-term returns to develop what we need for an endowment to provide operating funds. We usually haven't met a piece of property we didn't like. But they have to be taken care of. We should be recognizing the liability and cost of managing that into the future, and account for it. We have a well-managed endowment fund.

Last, Moore recognized the retirement of BPA's Bill Massey.

The meeting adjourned at 3:48 p.m.

Wednesday, May 9, 2016

The meeting came to order at 8:38 a.m.

5. Update on the 2014 Fish and Wildlife Program – Investment Strategy/Operation and Maintenance Strategic Plan: Bill Booth, Idaho Council Member; Mark Fritsch, manager, project implementation; and Bryan Mercier, Bonneville Power Administration.

Member Booth provided an overview on the development of long-term strategic plan for the Council's major physical assets. A database will be developed for these assets. Phase one has been an inventory. The first step was to focus on hatcheries because we thought it would take the longest. They have finished an inventory of the 14 hatcheries. Now phase two is a condition assessment. They are working closely with BPA on the project, and they have received four responses to their RFP to assess conditions. Site visits are next.

On the screens, truing up the 1,075 fish screens in the region. First is the inventory phase. Some, locations and ownership were in question. They are going to prioritize them into the larger units. They are nearing phase one. Then they will work on lands. They'll be moving to phase three – prioritization. Phase four is implementation.

Mark Fritsch ran through a slide presentation. They've been active in the Basin for 35 years. BPA has made substantial investments. Highest priority has been the O&M strategy for the 2014 program emerging priorities. That includes protecting bricks and mortar of hatcheries, fishways and traps, screens and diversions, and lands. The latter is influenced by stewardship funds.

Bryan Mercier, Bonneville Power Administration, discussed the asset management strategy: Inventory, condition and needs assessment, criteria for prioritization and strategic planning (planning-funding-transition to prioritized implementation).

They created a geographic mapping tool to highlight the 14 hatcheries and a place to harbor the gathered information. There will be a link on the Council website.

Screens and diversions: The Fish Screen Oversight Committee (FSOC) facilitated the development of the screen inventory with BPA funding. It compiles an inventory of screens in four states. BPA and FSOC members are reconciling screen inventory. It's possible that there are screens not in the system.

Lands: BPA has protected, through either free-title acquisition or permanent conservation easements, more than 700,000 acres. BPA conducts annual review of about 100 parcels of land each year from compliance with the terms of the conservation easements.

Member Lorenzen asked about land acquisitions before 2012. Mercier said they are looking at all lands acquired.

Timelines;

Hatcheries: Phase 2 complete by the end of the year.

Screens: Phases 1 and 2 will be completed by the end of the year

Lands: Phase 1 by the end of the year.

O&M Strategic Plan: Define Phase 3 and provide draft approach for Phase 4 in early 2017.

Member Anders said she knows this was a top priority and it's great work. Is there any plan

to do a similar mapping effort with the screens as with the hatcheries? Fritch replied there is, but it's not on there yet. It will be linked with Nancy Leonard's efforts. They want to map the land acquisitions too. It will be a good starting point for those who want to dig into the details.

Member Karier said it's a huge accomplishment. We didn't have records of what's been done before. It might be first that he's seen of screen inventory. With land, are you focused on everything with O&M for land? Fritch said we're looking at things that can't be addressed in their annual O&M budgets. A few do have structures and if there's an issue, we need to make determinations if this fits.

Karier asked if this is for hatcheries too? Fritch said they made a mechanism for that. Karier asked if residences and hatcheries are included. He said there should be a better way to manage the houses at the hatcheries. We don't want to see BPA in the house business. Seems like it should be looked at for the long term.

Mercier said that while we're trying to look at nonpriority areas, they are looking to manage assets over the longer term.

Member Rockefeller said we owe Member Booth a debt of gratitude for shouldering the responsibilities of moving this forward. He asked Mercier about the screen phase. It's not always clear if BPA is legally responsible for maintenance. Will you be trying to sort that out?

Mercier replied that it's their intention to recreate that history and to identify what other stakeholders have responsibility for maintaining these screens.

6. Briefing on the impacts of the 2015 drought on stream flows:

Greg Fuhrer and Chris Konrad, with the U.S. Geological Survey, presented findings on its low-flow studies in six western states, particularly in the Columbia River Basin.

Fuhrer said that the USGA got involved last year to see how flows respond to stresses like those we expect with climate change. We had near normal precipitation with low snowpack. The program calls on the federal action agencies, in coordination and collaboration with others, to "assess whether climate change effects are altering or are likely to alter critical river flows, water temperatures or other habitat attributes in a way that could significantly affect fish and wildlife important to the program."

How did we gather the resources to do this? We have eight science centers in the Northwest. Our hydrologists came up with some funding. We couldn't pass up this opportunity.

Our Northwest region partnered with Pacific region. We redirected \$500,000 to measure miscellaneous sites. The Oregon Department of Water Resources did measurements too. We did 340 measurements at sites that would be good indicators of drought.

Our hope is to better understand:

- stream vulnerability,

- which sites offer resiliency,
- which sites might be more temperature stressed, and
- the roles of geology, precipitation timing and duration of the dry period during the summer.

Konrad said the western U.S. had low snowpack, warm temperatures and extended summer dry period in 2015. The USGS investigated stream flow response in six western states. The objectives were to document the extent and severity of drought, to be able to compare sensitivity of different streams, and the factors controlling that sensitivity.

The importance of low flow:

Streams that resist drought have high “unit area” low flow are constant year-to-year, with a lot of ground water, which provides cold water refugia for fish and priorities for habitat protection.

Streams vulnerable are low unit-area low flow, variable year to year. They are priorities for water transactions and could be affected by groundwater withdrawals.

A variety of factors affect low flow: precipitation, snowmelt and groundwater. Ice melt and groundwater reduce vulnerability of streams for single-year drought. If we can identify which stream are vulnerable, we can better forecast problems in the future.

2015 low flows at USGS gauges in the Columbia River Basin were discussed.

Were low flows “extreme” in 2015? Low flows in 2015 were lower than normal in Willamette, Lower Columbia, Spokane and Upper Snake. He discussed assessing stream vulnerability to drought and how that was measured. The median annual low flow provides a simple measure of stream vulnerability to drought. The length of the summer dry period is a major factor and it’s hard to forecast that.

Possible future stops include:

- Expanding the assessment to ungauged sites,
- Basinwide mapping of stream vulnerability, and
- Assessing groundwater recharge from snowmelt in rivers.

Member Booth said he was glad that the USGA is cooperating with the Corps of Engineers. If the fish have spots the can get to, then they can survive. The Council is focusing on identifying those areas. Konrad agreed that’s a direction they’d like to go. “Just because drought is over, doesn’t make the information is less pertinent,” he said.

Member Rockefeller said that the USGS did work in the Yakima basin ... are you looking at continuity throughout the basin? Konrad said they aren’t.

Member Karier asked about sockeye and the problem with high temperatures. “How much difference do the flows make?” he asked. “Should we be worried that it could happen again?” Konrad replied that can’t be assumed. There are lots of particulars between the two and the mainstem is a different beast than streams.

Fuhrer said the EPA is doing cold water refugia work

Member Smith said he's interested in when the study would be completed and if they could come back to brief the Council. Konrad said he hoped to have it done this fall.

7. Presentation on Northern Tier Transmission Group

Idaho Power, Northwestern Energy and PacifiCorp, all members of Northern Tier Transmission Group (NTTG), are undergoing major development in transmission expansion projects, according to Dave Angell, Idaho Power's senior manager of system planning. These projects are targeted at relieving regional congestion and serving load growth.

NTTG's participating utilities are Deseret Power Electric Cooperative, Idaho Power, Northwestern Energy, PacifiCorp, Portland General Electric and Utah Associated Municipal Power Systems.

NTTG serves 4,308,200 customers with 29,239 miles of transmission. Angell discussed NTTG structure. It has a steering committee that is co-chaired by a regulator and a utility executive. It approves the study plan and regional transmission plan. There are three committees: A planning committee, cost allocation committee (which came out of FERC Order 1000) and a transmission use committee.

Angell described NTTG's latest Regional Transmission Plan, which is developed every two years. Its Plan considers both regional and local transmission needs and includes Gateway West, Boardman to Hemingway (B2H), Southwest Intertie North and TransWest Express.

The integrated resource plan for Idaho Power includes energy from the Pacific Northwest to serve loads in 2024 in Southern Idaho. NTTG's study of these projects revealed that building B2H is efficient and cost effective from a regional perspective. That is also the case with Bonneville's need to serve Eastern Idaho, he said. By having that transmission request into NTTG, that analysis selected B2H into the project.

There wasn't a similar transmission request for Gateway at this time. However there is a need for additional transmission at the local level, which justified proceeding with the project.

Council Member Yost asked about the need — if there is additional wind energy development in eastern Idaho, Montana or Wyoming. Angell indicated the line would be needed for solar or "any resource development on top of what we have, we'd need it. We're pretty constrained through Idaho" he said.

A requirement that came out of FERC 1000 is to study public policy requirements. Northern Tier had a request from Renewable Northwest, for an evaluation of retiring Colstrip Units 1 and 2 by 2020, and replacing them with 610 MW of wind at Broadview, Montana. While the study showed that it could be done, it would require generation tripping (taking generation offline) to maintain stability.

“You can’t just take out coal, put in wind and have an economically reliable system,” Angell said. “Tripping is required to maintain stability.”

Looking forward, Angell said member load submissions for 2026 are estimated to increase for Idaho Power and NorthWestern, whereas PacifiCorp and Portland General loads are projected to decrease. Overall a 240-MW reduction in load for 2024 is expected across NTTG’s footprint since the review was done. It also shows the resource stack changing with natural gas and wind generation declining while solar is expected to increase. Reductions in coal also are anticipated.

Council Member Pat Smith inquired about PacifiCorp looking at full integration with the California Independent System Operator (CAISO) in 2018. He asked, “What does that do to Northern Tier?”

Angell said that NTTG would be left with Portland General, NorthWestern Energy and Deseret, which is pretty small. NorthWestern and Idaho Power would get together and determine next steps. He said that WestConnect and ColumbiaGrid are options. NTTG and ColumbiaGrid folks have talked about joining their planning committees and covering the entire Northwest. He said they have been having ongoing meetings for five-to-six months and have made some headway. “But we’ve made headway before, but never actually get to the finish line,” he said.

Member Karier asked if there is a connection between what the Council heard with Gateway West and BLM. “But you said there’s a segment not necessary that I think overlaps with BLM? Are you saying it’s not needed?”

“Need is defined by many different things,” Angell said. “For the NTTG, it was not required for reliability for the loads assumed. It depends what resources come into the Wyoming area as far as wind generation and if they want to export that.”

Kujala added that the key point for NTTG is “for reliability.” There are lots of reasons to build transmission. Not just keep lights on. There might be every good financial reason. NTTG is more focused on serving its future load.

8. Update on Idaho Power joining the Energy Imbalance Market

Tess Park, Idaho Power’s vice president of power supply, provided an update on the utility’s decision to join the Energy Imbalance Market (EIM) in Spring 2018. Idaho Power is the sixth utility to announce its intention to join the western EIM. It serves nearly 525,000 customers in southern Idaho and a portion of eastern Oregon.

Walking through the steps, Park said the utility first evaluated market solutions, such as a security constrained economic dispatch and a centrally clearing economic dispatch. Being outside of BPA’s footprint, costs and lack of a level playing field brought Idaho Power to contract for a benefits study on joining the EIM. The study revealed that while the costs to join are roughly \$10 million, the benefits would cover startup and ongoing costs.

“The majority of our interconnections are with participants in Western EIM,” Park explained. “Idaho Power can provide benefits to them as well. The market is founded on transmission reciprocity. With PacifiCorp, we can use their transmission and they can use ours. They were the big pushers for us to join. They see us as a way to move energy from west to east across Idaho. There are market benefits, transmission benefits and it provides the least-cost resource to serve our loads.”

She added that with EIM, they are all one footprint and, to the extent that there’s not a transmission constraint, the market will take the lowest-cost resource that can supply that imbalance, which doesn’t cause a transmission constraint.

Park said that the benefits to Idaho Power include decreased net power supply costs, increased reliability, lower reserves, renewable resource integration, and voluntary participation. “You can get out if it’s not working out.”

The next steps include submitting an implementation plan with California ISO for participation, selecting vendors, and meeting with federal and state regulatory bodies.

Member Lorenzen asked what is the most economic way to dispatch a generator? Are transmission losses considered in what plant would be supplying what energy? Park said that transmission losses aren’t considered in that discussion. But they are addressed in each person’s tariff.

Member Smith asked if Idaho Power considered if NorthWestern Energy joined the EIM?

Park replied that they ran some scenarios and found that the more participants, the better the benefits. The least benefits were in a Section 111 (d) reduction in coal and a higher penetration of renewables.

Highest benefits were found with more participants. They also limited hydro in their study.

Member Yost asked if the study were run assuming that Gateway West and B2H were in place. Park answered that it was not. Member Yost asked if it would be more beneficial with lines in place? Park said the belief is that it would.

Member Yost asked about Idaho Power’s 300 MW of additional solar generation by the end of this year or early next. “Would transmission help to go west or east? Can you market it now?”

Park replied that there are bilateral markets. From an integrated perspective, the balancing operators look at it a day ahead and determine what we’re expecting with wind. In real time, Park said they are hoping that solar will be better than wind. But you end up with variations. Bilateral markets aren’t as robust as they used to be. They are hopeful that with the EIM and more transmission on the horizon, that they can market that instead of running other resources.

Member Yost said, “You didn’t talk about reserves. It appears in an EIM, you’d have more flex on reducing reserves. Today, in EIM, you have to have enough reserves to meet your needs. Savings comes from not having to hold reserves because you can go somewhere

else if something happens.”

Park said that today, in EIM, you have to be resource balanced and you have to have enough reserves to meet your needs. Where the savings comes is that today, because there aren't intra-hour products to rely on, you're holding more reserves than you normally would if you know you can go somewhere else for a solution. We didn't include a reduction of reserves in our benefit study, she said.

Member Lorenzen asked if is there tension in the EIM group in some wanting to hold reserves or is everyone on the same page?

Park replied that if there is an imbalance — something you weren't planning on, there's a fee for that. With a penalty, people are going to tend to be more conservative.

Member Karier asked if they dedicate which resources are in the EIM, and will it include hydro? Park replied that they get to select them and some hydro will be included.

Member Karier observed that California has different policies on carbon and additional costs. Does that translate in the short-term markets at all when you sell into California? Are there benefits to hydro or a penalty for a gas plant?

Park said that EIM has components of some California legislation, so they'll have a price for those resources.

9. Discussion of Bonneville's Focus 2028 process

Thad Fowler, Wells Rural Electric Company's (WREC) manager of external affairs, and Bear Prairie, Idaho Falls Power's assistant general manager, shared their concerns about declining load growth, energy-efficiency mandates and the economic pressures their customers are under.

Fowler said that for eight years, WREC has used its budget to subsidize energy-efficiency programs. WREC is a member-owned cooperative that serves 6,116 members over 11,000 square miles in northeastern Idaho and northwestern Utah. Its customers range from small, seasonal stock water pumps, to three industrial members who account for 72 percent of its winter peak. It also serves 5 MW of seasonal irrigation.

He said that the majority of WREC's members work in service industries, putting them in lower-income brackets. This combination of factors results in unique challenges to implementing energy efficiency programs. The total energy sales yield an energy-efficiency budget of about \$1.1 million per year. That budget requires that they acquire more than \$163 in energy efficiency savings per member per year. That's the equivalent of getting every member to retire two older refrigerators for \$50 rebate each, and replacing them with two Energy Star-rated refrigerators for a \$25 rebate each.

“Many utilities, including WREC, are experiencing very low load growth,” Fowler said. “Even though our members are using less energy, and installing energy efficiency measures, they see their bills increase, as wholesale power supply rates escalate and the recovery of our

variable recovery rate is shifted into the fixed, monthly service and demand charges.”

Fowler added that while WREC recognizes the value energy efficiency presents to strengthen relationships with members in order to provide a low-risk, carbon-free resource for electricity, BPA’s Tier 1 wholesale power rates have increased 25 percent since 2010 and that has placed a huge financial stress on utilities. He said that WREC has cut, capped or increased the recovery of costs throughout its operations by reducing staff and benefits, outsourcing, automation and refinancing. Since wholesale power and transmission costs account for 77 percent of total budget and depreciation, and adding debt service raises it to 82 percent, continued cost cuts are no longer sustainable.

He said that implementing energy efficiency programs means managing EQUITY issues. All customers fund energy efficiency through their rates, but not all members can take advantage of the incentives. He pointed to customers on limited incomes, renters and industrial customers. Landlords have no incentive to participate in energy-efficiency because they don’t pay the bill, he said.

One success is the direct install of compact florescent light bulbs, Fowler said. They used that opportunity to take an energy snapshot of structures and are using that information to do target marketing.

There is enormous potential in central and space heating, he said. Forty-two percent of their housing stock is manufactured, which speaks to a lack of qualified building contractors. Sixty-one percent of their customers rely on electricity for space heating because of a lack of natural gas infrastructure in their service area.

Fowler also discussed grocery savings potential, but he said that the skillset to implement Energy Smart Grocer is limited.

The region’s short growing season limits investing in irrigation efficiencies, he added.

“For WREC to reach levels of energy efficiency that the Council has encouraged BPA to seek, we need increased flexibility in available measures, rebate amounts and reporting periods,” Fowler said. He asked for increased utility self-funding and a corresponding decrease in BPA energy-efficiency rate components.

Idaho Falls Power’s Bear Prairie echoed Fowler’s concerns. “What keeps me up at night is loads, and if they fail to come back,” he said. “I used to assume load growth would come back in 2013 as we worked through our cost-of-service process. Through the last six months, our residential and commercial sales have been down 10 percent.”

He said last December, they had average temperatures, and still their loads were eight percent under forecast while commercial was 10 percent under. “And that’s with growing customer counts,” Prairie said. “We’re a growing utility with shrinking loads. My ask to BPA with Focus 2028 is to come up with energy-efficiency targets that work for Bonneville. Preference customers aren’t having the load growth. Be flexible for utilities without load growth.”

Council Chair Henry Lorenzen remarked that he tended to be an idealist. “I’m also a

member of a co-op and am familiar with these discussions having represented co-ops,” he said. “Co-ops should be trying to develop the best product for lowest possible cost. Sometimes that’s a conflict with the pressures the utility itself faces. Customers should be shouting hooray for paying less. But you also have pressure to cover your overhead. It drives me crazy. One of my pet concerns is the disconnect between incentives for energy efficiency and the real pressures utilities face.”

Member Lorenzen said to consider the long view. “In the last 20-30 years, we’ve saved 5000 MW in the region as a whole,” he said. “Otherwise, you’d be paying more on the transmission side. Energy-efficiency has both a short-term cost and long-term benefit. But it doesn’t help you set your budgets for next year.”

Member Karier wondered if a solution would be to allow utilities with declining load growth to use incentives more intensely. Another would be allowing utilities to sell their EEI to a growing utility that could use it.

Fowler said that would make a lot of sense in terms of creating a market where we could support energy-efficiency measures in neighboring utilities, which could increase that capacity. Hopefully that cooperation could extend the life of the transmission system. Getting window replacements is miserable. By bumping that incentive, you could get contractors to enter the market.

Prairie said, “But then you have utilities with growing loads getting savings on the backs of the other ratepayers. It gets at BPA being more flexible with their contracts.”

Fowler added that rebates have distorted the value of energy-efficiency. “We’ve given away so many light bulbs, you couldn’t get a customer to buy one at gunpoint.”

Member Yost said the Council has been hearing this for a couple of years now. BPA is taking a serious look at coming up with some potential solutions. We found up that one size doesn’t fit all.

Council Business

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO APPROVE THE MINUTES OF THE APRIL 12-13, 2016 COUNCIL MEETING

Member Booth moved that the Council approve for the signature of the Vice-Chair the minutes of the April 12-13, 2016 Council Meeting held in Missoula, Montana.

Member Anders second.
Approved without objection.

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO RELEASE THE 2015 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM COSTS REPORT FOR PUBLIC COMMENT

John Harrison, information officer, said they put all the tables online. Will be an electronic link to it. We'll send copies to Governors and Congressional offices. They combined two charts on how expenditures have grown over time and added the totals.

He explained that the components of the 1a and 1b figures are the same with regard to Fish and Wildlife. In 1a, they show all the costs as reported to the Council by BPA, which includes foregone revenue. Figure 1b does not include foregone revenue. If you want to see what percentage Fish and Wildlife comprise, that's in 1b at 24.5 percent. If you want to see what those same costs look like with the foregone revenue in 1a, that's 33.3 percent.

Member Karier said that it looks fine. "What do you mean by 'remaining expenses?' Can we spell it out?"

Harrison said they could. Mark Walker, public affairs division director, said they could just say nonfish and wildlife.

Member Bradbury expressed his appreciation for Harrison's work to deal with an issue that has been troublesome to the Council on the cost of the Fish and Wildlife program, and for working out a good compromise.

Member Booth moved that the Council release the Fiscal Year 2015 Columbia River Basin Fish and Wildlife Program Costs Report for public comment for a period of 30 days, as presented by staff.

Member Karier second.
Motion passed without objection.

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO RELEASE THE ISSUE PAPER ON THE PROPOSED FORMATION OF A DEMAND RESPONSE ADVISORY COMMITTEE AND SYSTEM INTEGRATION FORUM FOR PUBLIC COMMENT

Kujala said they're working on the first implementation item from the plan, and they received some feedback.

Member Karier said it has support from the Power Committee.

Member Booth moved that the Council release the issue paper on the proposed demand response advisory committee and system integration forum for public comment for a period of 30 days, as presented by staff and recommended by the Power Committee.

Member Karier second.
Passed without objection

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO SELECT WINNING BID(S) AND AUTHORIZATION TO ENTER INTO CONTRACT(S) FOR FY 2016 WORK ON INDUSTRIAL LOAD AND EFFICIENCY ASSESSMENTS

The Council released an RFP and received four proposals. They narrowed it to Northwest Food Processors Association (covering three segments) and Energy 350 (covering five segments). They total is \$90,000, for \$45,000 each.

Member Karier said it was approved by the Power Committee.

Member Booth amended the motion to specify two contracts.

Member Booth moved that the Council authorize the staff to enter into two contracts to update the energy load and efficiency potential of the Northwest industrial sector in an amount not to exceed \$100,000, as presented by staff and recommended by the Power Committee.

Member Karier second.
Motion passes without objection

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO RELEASE ITS DRAFT FISCAL YEAR 2018 AND FISCAL YEAR 2017 REVISED BUDGET FOR PUBLIC COMMENT

Administrative Division Director Sharon Ossmann reported that when the Council releases a draft for 45-day public comment, we get comments at the June meeting and adopt the budget in July or August of the same year. It will be available on the Council's website.

Bill moved that the Council release the draft Fiscal Year 2018 and Fiscal Year 2017 revised budget for public comment for a period beginning May 12, 2016, and ending July 1, 2016, as presented by staff.

Member Anders second.
Motion passes without objection.

NORTHWEST POWER AND CONSERVATION COUNCIL MOTION TO AUTHORIZE THE STAFF TO NEGOTIATE A CONTRACT WITH OMBU FOR REDEVELOPMENT OF THE REGIONAL TECHNICAL FORUM WEBSITE

Kujala has gone through process of going through vendors and has selected OMBU. Member Lorenzen observed that it's a second start on a website contract.

Kujala said that this is a little different because it is focusing on the RTF website. This approach made sense since the Council had to withdraw from the larger effort.

Member Anders said this was considered and approved by the Public Affairs Committee the previous day.

Member Booth moved that the Council authorize the staff to negotiate a contract with OMBU for redevelopment of the Regional Technical Forum website in an amount not to exceed \$120,000 as presented by staff.

Member Yost second.
Motion carried without objection.

Public Comment

Scott Levy, Bluefish. Levy began referencing a discussion at the Missoula Council meeting about the impact of heat on sockeye. There is a reservoir issue that the Corps have been trying to ignore, he said. He mentioned Simon's ruling and said that there are charts missing from a report. He showed photos of turbines and made statements about O&M costs.

Tim Sheldon, Washington state senator, addressed the Council. He also is a board member for Energy Northwest. He said he is concerned about BPA's Focus 2028 process and where we're going. At Energy Northwest, they lowered costs by 10 percent, he said. Sheldon hopes that in the next 8 years, costs will be lowered by 15 percent. He talked about cooperating with debt reduction and low-interest loans. He also talked about a rate cut at Wells Co-op.

Adjourned at 11:43 a.m.

Approved June 15, 2016

/s/ Bill Booth
Vice-Chair