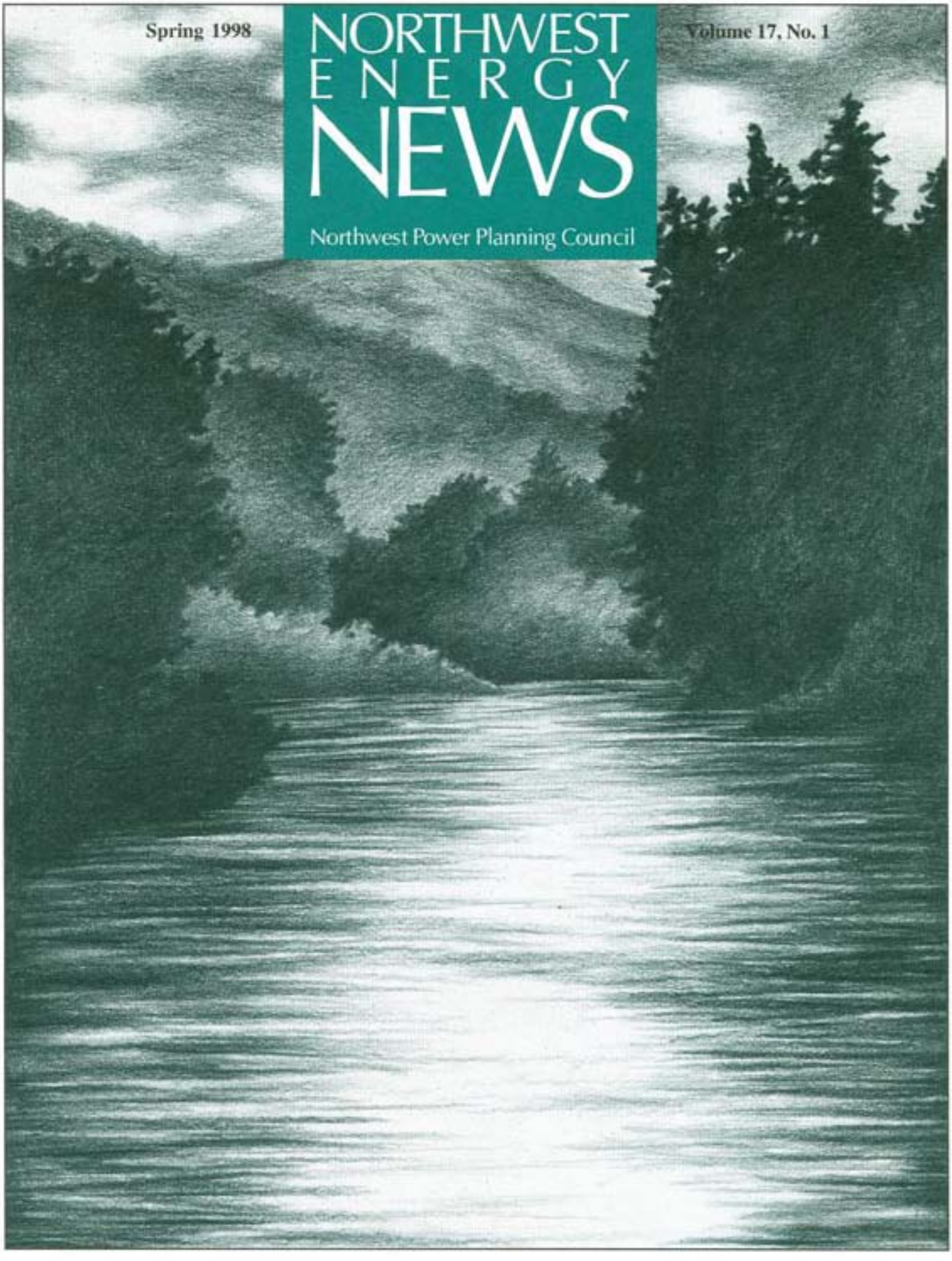
Spring 1998

NORTHWEST ENERGY NEWS

Volume 17, No. 1

Northwest Power Planning Council



Spring Issue

This issue's cover illustration is a NWPPC file illustration by Joan Barbour.

Northwest states, the federal government and Columbia Basin tribal sovereigns explore collaborative decision-making.

by Carlotta Collette

The people designing a new process to protect Northwest salmon bring equal portions of cautious optimism and well-worn pessimism to their task. They have reason for both. Nearly every one of them has been in this business of salmon recovery for decades now. The enormity and importance of their objective is not lost on a single person.

They pull together a room-filling rectangle of tables, carefully arrayed to discourage any one seat appearing to be at the head. They have been calling their efforts a gathering of the "Three Sovereigns," referring to the U. S. government, the Pacific Northwest states and Columbia River Basin Indian tribes they represent. Together they are trying to establish a "genuinely collaborative decision-making process," in the words of one of the key organizers, Roy Hemmingway, representing Oregon Governor John Kitzhaber who convened the group last summer.

Their still-evolving plan is to have major issues regarding the Columbia River Basin ecosystem be decided upon by one group — what they are calling the Columbia Basin Three Sovereigns Forum. A Columbia Basin Sovereigns Committee, made up of senior staff, would analyze, debate, record and review the issues and make recommendations to the Forum. A single group of independent scientists and a similar team of economists would review the Committee's proposals.

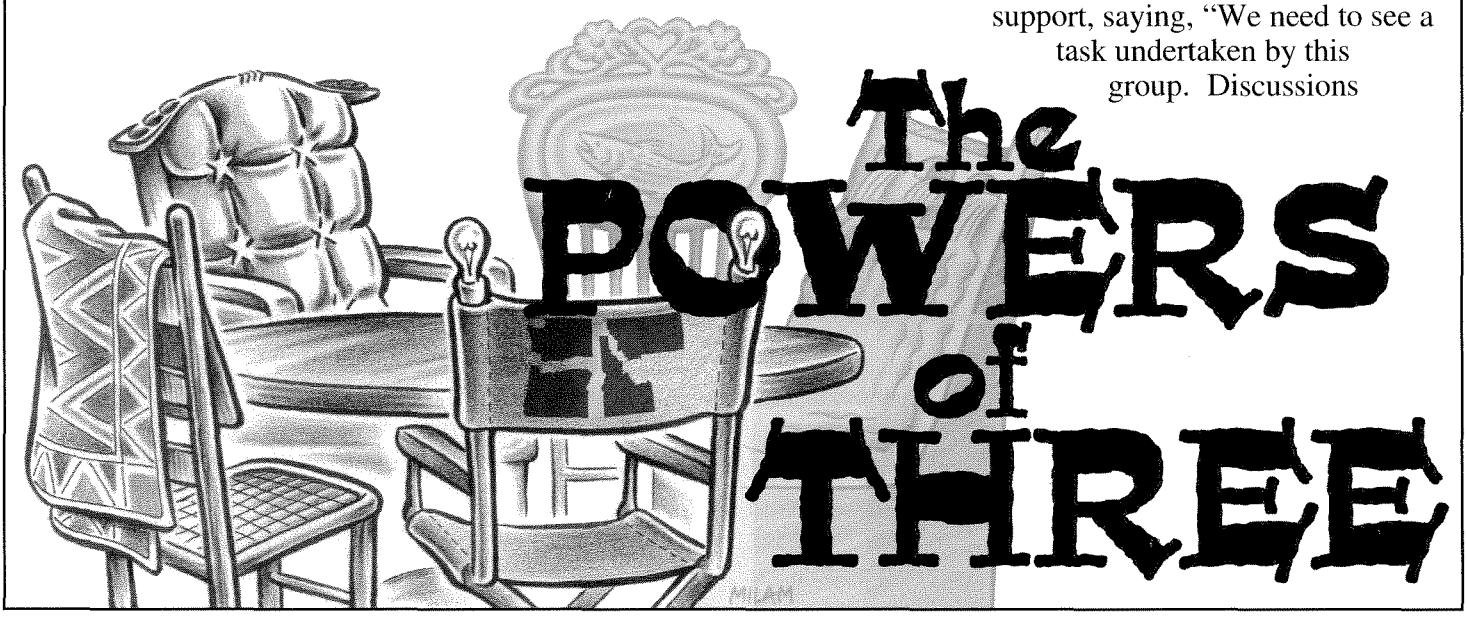
The participants view this collaboration as a means of gaining broader support for critical decisions so they "can be implemented without objection." They would also try to reduce or eliminate some of the organizational overlap, and consequent inefficiencies, inherent in current basin decision-making processes.

There have been months of intense discussion and debate, and seemingly endless hours of drafting a memorandum of agreement by lawyers representing each of the sovereigns. Their intent, if and when it is finalized, is to put it before the public for review, and then return to the table to decide whether or not to proceed. If the decision is to move forward, the Three Sovereigns could constitute the Forum for future debates regarding the still-declining salmon runs, as well as other fish and wildlife and related ecosystem decisions. The big uncertainties, such as whether to breach several dams in an effort to improve migration survival rates and increase mainstem spawning habitat for salmon, are potential subjects that could be addressed by this body.

How goes the debate?

Roy Sampsel, a Northwest consultant who has facilitated the group, says the participants "vary in their enthusiasm" for the new approach.

States: Because it was Oregon Governor John Kitzhaber's idea to kick off the process, Oregon is likely to support it, Sampsel offers. In fact, Hemmingway says his governor is "impatient with continuing discussions of 'the shape of the table' when there are important decisions to be made on the river." Washington's representative, Mike Kreidler, a member of the Northwest Power Planning Council, signals cautious support, saying, "We need to see a task undertaken by this group. Discussions



NWPPC file illustration by Larry Milam

about the 'shape of the table' will be resolved over time." Stan Grace and Mike Field, also Council members, representing Montana and Idaho respectively, have helped move the process forward, while both have pressed for a more focused scope and budget accountability. In mid-February, while observing that the Three Sovereigns' concept "has a certain appeal to it," Idaho Governor Batt expressed strong reservations about any implication that the process would exercise control over water resources.

Federal: National Marine Fisheries Service Regional Director Will Stelle reported at a meeting in early February that "federal agencies in D.C. are on board with the collaborative process and anxious to get on with it." At the same time, however, the regional agency directors asked for more time to bring their D.C. counterparts up to speed on the specifics of the proposal and develop a federal position on outstanding issues regarding their participation in the process.

Tribal: It's the region's Indian tribes who have the most at stake in the Three Sovereigns' approach because it would give them an equal voice at the table, Sampsel says. Reports from tribal discussions suggest that indeed the tribes do want the Three Sovereigns' Forum to become a reality.

Howard Funke, a representative from the Spokane and Coeur d'Alene tribes, speaking at a December meeting, stressed his concern that previous recovery processes have been "dysfunctional." He said the tribes want to see "open and meaningful consideration of opinions. This agreement will provide a free exchange of ideas." That's an important step forward, he said.

On the other hand, choosing a small number of representatives to stand for the basin's 13 Indian tribes will almost certainly be a daunting task.

Together they are trying to establish a genuinely collaborative decision-making process.

Noticeably absent from the table have been the so-called "river users." These include irrigating farmers, barge companies and others whose businesses will be affected by major changes in river operations. In theory, at least, they are represented by their respective states and the federal government through their congressional delegations. But that may not be the case when state or federal interests conflict with industry concerns. Rob Walton, representing the Public Power Council, says the failure to afford river users full participation weakens the process. "There's little controversy in the region over whether to improve governance mechanisms in the river basin," he says, "but whether the Three Sovereigns Forum will do that remains to be seen. Right now, the drafters represent less than the full set of interest groups in the region."

Lingering questions?

Walton's concerns mirror some of those brought forward by the sovereign representatives themselves. They all wonder how to best represent each sovereignty — whether with one or four federal people in the decision-making role, for example. They question whether decisions should be made by consensus, the direction the group appears headed, or by some other format that would allow movement even if there is not total agreement. A good deal of the debate has focused on the scope of work the new group would take on. And, of course, the question of funding is critical.

But each of these can be readily resolved, Sampsel says, and should be fairly well spelled out before any agreement is signed. A preliminary scope of work and budget, with staffing suggestions, will accompany the agreement proposal when it is reviewed by the public.

The draft agreement describes a three-phase process to stage the group's work. During the first phase, the group would identify and prioritize key issues and review existing plans and implementation efforts. During the second phase, the group would attempt to create a single, unified recovery plan to "treat the Columbia Basin's resources on an ecosystem basis." In the third phase, they would work together to implement their unified plan.

Throughout the long discussions, the sovereigns and their representatives have used expressions like "agree to work in good faith," and approach "with flexibility" — terms that speak to the delicate balance of respect and shared authority they hope to maintain through their collaboration. They know they are facing a task no one among them has been able to accomplish in the past — restoration of one of the most complex and most developed ecosystems in the world. But each of them also recognizes the urgency of their effort.

In the words of the draft memorandum of agreement: *Addressing all issues at once is not possible; establishing clear priorities is essential.*

Washington's first woman senator speaks out on salmon and Northwest energy.

Patty Murray

with Carlotta Collette

Most voters in Washington state have already heard the story of how Patty Murray, a housewife with two children, came to be a politician, eventually becoming one of the Northwest's Democratic senators. It's one of those "Ms. Smith Goes to Washington" kind of stories. She calls it an accident. "I never envisioned myself doing this," she says.

It was the early 1980s, and Murray's two children were preschoolers in a community college-sponsored early education program. The state was facing a budget crisis, and among the programs that got cut was the one her children attended.

"I got really furious," she recalls, "because I thought this was an important endeavor for a state to support people in their role of parenting, and also to provide a community network for young kids."

Steeped in that "in-a-democracy-you-can-have-an-effect" attitude, Murray drove — children in tow — to the state capitol in Olympia to find out who to talk to about how the state spends money. Even though she was born and raised in Bothell, Washington, just a couple hours north of the capitol, she admits she'd

Portrait by Stephen Hayes

never been there before. People in the capitol steered her toward several legislators, and one of them delivered the line that has since become famous: "You can't make a difference," he said, "You're just a mom in tennis shoes."

The rest, as they say, is history. Murray, furious again, drove home and began to organize other parents with children in preschools around the state. In three months, she had 15,000 parents organized. With that clout, she returned to Olympia and was able to regain the funding for preschool programs.

"What that did to me, as somebody sitting out here," she says, "was to make me realize that, if you get involved and work extremely hard, you can make progress for things you like. I would much rather be involved in the decision-making process and move it in a direction that I think is positive," she adds.

From her grassroots organizing, Murray moved on to a position on her local school board. Then, in 1988, she ran for the state Senate against a two-term incumbent and won. "Nobody thought I could win, but a lot of friends helped me."

From her new perspective inside state politics, it became clear that many of the big decisions that affected Washington state were being made in Washington D.C. Eventually, she was convinced that, "the only way to represent the people I know so well and to be able to fight for what I believe in was on the floor of the Senate."

Murray resolved to make her way to that floor, and in 1992 she was successful. Once again against significant odds, she organized a grassroots campaign and won.

The causes that first got her to Olympia are still top concerns for her today. "What got me elected was caring about issues that affected regular families: education, health care ... and knowing what people struggle with every day ... communities that struggle with trying to balance natural resources, for example." As always, her politics are based in personal concerns, situations she knows deeply. "My dad had multiple sclerosis, so I grew up watching what the health care system does to or for somebody with a serious illness. And I also grew up in a family that went hiking and camping," making the Northwest's environment an important concern.

"Protecting the reach as spawning grounds is the most economical thing we can do to preserve salmon for the future."

It is her concern for Washington's environment, as well as its economy, that has led to her involvement in both the future of Columbia River salmon and the Bonneville Power Administration.

She explains: "I grew up in a state where salmon are part of our culture, part of our heritage, for a very important reason — salmon speak to the independent spirit of the Northwest. I don't ever want to see that lost."

Your concern about Northwest salmon has led you to propose legislation that would protect the Hanford Reach of the Columbia River in eastern Washington as a wild and scenic river. Why are you concerned about this stretch of the river?

The Hanford Reach area is the last 51-mile stretch of the Columbia River [in the United States] that is undammed. It is the best salmon spawning ground we have on the Columbia River. At a time when we are spending so much of our federal and regional resource dollars on trying to preserve salmon, protecting the reach as spawning grounds is the most economical thing we can do to preserve salmon for the future. It's much cheaper, obviously, than making major changes to dams and a lot more politically feasible.

We are dealing right now with the U.S./Canada Treaty on fish that has been very contentious. One of the things Canada is saying to us is that we need to show, from both a U.S. and a Northwest perspective, that we are willing to preserve salmon.

Maybe, in my heart the bottom line is the fact that my father grew up in the Tri-Cities. He was called to serve in World War II and was injured. The Tri-Cities gave a lot to the rest of this country to win that war, and we're paying it back at a high cost at Hanford in trying to clean that place up.

It seems to me a wonderful gift back to that community would be a "wild and scenic river," with recreational use on it, where people can fish and enjoy it for its tremendous beauty and splendor for many generations to come. That just seems like the right thing to do.

But some of that community is in contention about whether it should be the federal government protecting it or the Tri-Cities community. How do you address that?

First of all, when I started working on this several years ago, I brought together a number of people from the community to help me write the wild and scenic recreational use bill because it is their river, their backyard. They obviously need the most say in it.

One of the issues they raised continually was that they want to have a say in what happens there. So part of our bill is written so that local community people have a say in the decision-making process about how the river is used in the future. I feel this is very important.

There are some county council people who are opposed to designating the reach as wild and scenic. They want local control. I understand that. But I also know they do not have the resources to manage the river for recreational use, as it would be if it were designated "wild and scenic." A local designation won't bring to the region what a federal designation would.

Finally, and most important from my perspective, is the fact that if we went with the county council's management, they would make any decisions affecting the river. But this stretch of the river affects not only the local communities. It affects fishermen in Ilwaco. It affects citizens in Oregon in terms of what they have to do for fish management. It affects Alaska. It affects Canada. It affects a huge region, the Pacific Northwest.

A fisherman in Ilwaco doesn't have a vote about who is on the county council in the Tri-City

"A fisherman in Ilwaco doesn't have a vote about who is on the county council in the Tri-City area."

area. We have to be responsible to all the people who are affected by this river. That's why I believe a federal designation is not only the most economical, it makes the most sense, brings the most resources to it, and does right by all the citizens of this region.

What's your strategy for getting your bill passed?

I have worked very hard to educate people about the Reach. Two years ago, when I said "Hanford Reach," no one knew what I was talking about. I say it now, and virtually everyone has at least a glimmer of understanding what this is. We have brought tremendous attention to this issue, and I think that is great progress.

Obviously, the ultimate goal is to pass the legislation. To do that, I need the support of 51 senators and half the House members. We are now working in the House and in the Senate to educate people about this tremendous national resource.

I'm working closely with Senator [Slade] Gorton [R-WA]. I believe he is committed to finding a solution to this as well. He and I both understand the needs of the local community. Both of us understand the regional, national and international importance of this decision.

How does this fit into a broader strategy to recover salmon in the Columbia Basin? How do you think that is progressing?

It is frustrating. We have five agencies, at least four laws, several treaties and the [Northwest Power Planning] Council that all have management or governance of the river. The result sometimes has felt like chaos.

I would like to see some kind of unified regional approach to running the river. Rivers don't know state boundaries. The fish don't know state boundaries. And our other natural resources don't know state boundaries. It is absolutely imperative that we bring everyone together for a regional perspective to solve these issues. We can't get into North/South, East/West, one user group against another user group, one political party against another political party. We've got to have a way to solve this, and everybody's got to give up a little.

If we don't have regional consensus, we're never going to get there. If we want to maintain control of the resources from this region, we have to wake up to that. Show some initiative, bring some people together to take leadership in this and solve it. It's not going to be easy. We're all going to have to work together. That ought to be the goal.

Having said that, there are some things we can do right now. First, protect the Hanford Reach as a salmon spawning ground.

Second, we can use the mid-Columbia habitat conservation plan to show how we can govern federal projects in the future. We're close to having that completed.

Third, we need to extend the memorandum of agreement* so we know how funding for fish and wildlife recovery will occur beyond the year 2001.

We should be fine-tuning the [U.S. Army] Corps of Engineers' spending decisions. A proposal to have them do direct funding and set better priorities for construction projects was recently enacted.

There are some things we can and are working diligently on right now, but ultimately we have to come to a regional consensus on running the river.

Who do you think needs to be at the table? We hear a lot about the "three sovereigns" process under discussion, which would bring the tribes into leadership roles in the decision-making [see related story]. Could you address that?

We will not have regional consensus until we're all at the table. I think the tribes are a very important part of any decision that is made. If we do not bring the tribes into the process, we will not have a solution that works. And when we're all at the table, everyone is going to have to give a little bit. But if we don't agree to a process to do that, this decision is going to be taken out of our hands. We can't continue to get federal funding to help us. Ultimately, we could lose the fish.

"If we do not bring the tribes into the process, we will not have a solution that works."

Do you see the Power Planning Council being changed, perhaps adding new members or reducing the membership, to accomplish that?

I don't want to preclude anything by putting a plan on the table. I think the most important decision that can be made right now is for people to agree to sit down and work it out.

The region did a substantial amount of work in 1996 on the Comprehensive Review of the Northwest Energy System. Is the follow-up on that moving in the direction it should and is it fast enough?

The regional review did a good job in some ways and obviously didn't do a good job on other things. They did a good job in moving the ball forward on power marketing and transmission issues. That was tough work.

But they did not do a good job, and what I'm disappointed about, was in regards to the fish.

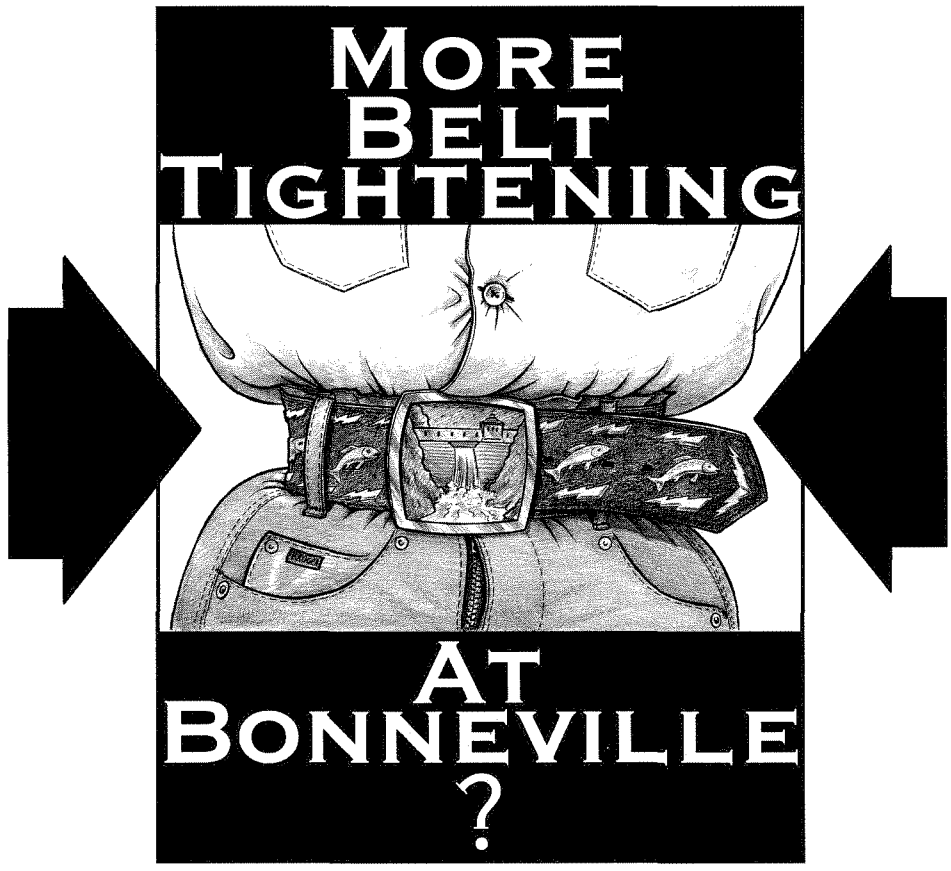
Because of the work of the review, I'm fairly confident we'll see some kind of Northwest chapter if a national deregulation bill passes on energy. The work of the regional review really set us on that roadmap. If the whole issue begins to take hold in Congress, and we do move toward deregulation, we've set the groundwork for that.

What about the Bonneville Power Administration? What do you think Bonneville's future will be?

I think it's important that the Power Council go forward with the cost-cutting committee [see next story]. Everyone agrees the agency has to slim down. We have to take a hard look at how the agency is spending its money and make some recommendations. That's an important process.

I'm also very concerned about who is selected to head Bonneville. I've made it very clear to the department of Energy that this is a decision I'm going to be fully involved in. Two-thirds of Bonneville is in Washington state. We have the majority of Bonneville's resources and infrastructure. Whoever is appointed to head Bonneville has to be a candidate that is acceptable to my state. There is no regional consensus on this decision yet.

*The memorandum of agreement set an annual average budget for Bonneville Power Administration funding of fish and wildlife recovery efforts. The agreement expires in 2001.



Cost Review Management Committee proposes $146 million in potential cuts.

A committee of experts in corporate financial management and energy policy is recommending that the Bonneville Power Administration improve its long-term competitive status by cutting staff, testing the market viability of the region's only operating nuclear power plant, and reducing investments in energy conservation and renewable resources. The committee also urged greater coordination and consolidation among federal agencies managing the Columbia River hydropower system. These agencies include Bonneville, the U.S. Army Corps of Engineers and the Bureau of Reclamation.

Taken together, these actions would save about $146 million from Bonneville's annual power business budget and help the federal power marketing agency survive after 2001, when 90 percent of its existing power sales contracts expire.

The recommendations were drafted by the 11-member Cost Review Management Committee, which was assembled by the Northwest Power Planning Council and Bonneville in response to a request by the governors of Idaho, Montana, Oregon and Washington, and Oregon Congressmen Peter DeFazio and Bob Smith. The committee's draft report was released January 20 for public comment. After considering extensive public comment, the committee made its final recommendations.

"These savings, when achieved, will retain the benefits of the Columbia River power system for citizens of the Pacific Northwest and also provide price certainty to Bonneville's customers and assure its creditors that Bonneville can pay its bills," said Committee Chair Todd Maddock of Lewiston, an Idaho member of the Northwest Power Planning Council.

Some of the committee's key recommendations include:

- **Power system cost management:** Initiate a cost management strategy involving the Corps of Engineers and Bureau of Reclamation. While Bonneville markets the power produced in the federal power system, the Corps and the Bureau manage the dams. An integrated strategy aimed at increasing productivity while improving operations and maintenance is necessary. Estimated savings: $48 million (Corps, $40 million, Bureau, $8 million).
- **Washington Nuclear Plant 2:** The Washington Public Power Supply System,

NWPPC file illustration by Jerry Kruger

the plant's owner and operator, should cut the cost of the plant's electricity from 2.4 cents per kilowatt-hour to 1.9 cents by the year 2000 and hold costs close to that level. Estimated annual savings: $19 million. Bonneville should price a portion of the Federal Base System equivalent to the planned output of WNP-2 to recover the plant costs. The plant should be tested against market prices biennially and termination evaluated if costs exceed market revenues.

- **Energy conservation and renewable energy:** 1) Fund market transformation activities — promoting energy-efficient products and services — as recommended by the Comprehensive Review. Estimated annual savings: $4.6 million. 2) Continue existing utility conservation contracts, but reduce budgets to reflect actual spending, and do not extend any such contracts. Extend low-income weatherization contracts to coincide with end of utility contracts. Estimated annual savings: $2.5 million. 3) Fund the three currently planned renewable energy projects up to an annual net cost of $15 million. Undertake new projects only if costs are covered by revenues. Estimated annual savings: $2.2 million.
- **Internal cuts:** 1) Reduce staff and support costs for power marketing and related functions. Estimated annual savings: $14.7 million. 2) Reduce corporate overhead costs by 50 percent by 2002 in areas including business services, planning, public affairs and legal services, among others. Estimated annual savings: $32 million ($14.5 million in power marketing and $17.5 million in transmission). 3) Pursue legislative changes in procurement and personnel regulations to improve administrative effectiveness and efficiency. Estimated annual savings: $10 million.
- **Transmission:** Reallocate certain costs to transmission and increase efficiency. Estimated savings: $32 million in power marketing.
- **Northwest Power Planning Council:** Reduce budget to reflect a changed power planning role. Estimated annual savings: $1.1 million.
- **Debt service savings:** Further reduce non-federal debt service through such steps as greater reliance on variable interest rates. Estimated savings: $20 million.

"THESE SAVINGS, WHEN ACHIEVED, WILL RETAIN THE BENEFITS OF THE COLUMBIA RIVER POWER SYSTEM FOR CITIZENS OF THE PACIFIC NORTHWEST."

The Bonneville cost review grew out of the 1996 Comprehensive Review of the Northwest Energy System, a yearlong effort initiated by the governors of Idaho, Montana, Oregon, and Washington. In that review, a 20-member committee recommended ways the Northwest could take advantage of increasing electricity industry competition and also retain the benefits of the federal Columbia River power system. One recommendation was to cut Bonneville's costs to reduce the price of its power to a competitive level. Currently, Bonneville's power is slightly more expensive than the market price.

Following the Comprehensive Review, the governors asked the Power Planning Council to work with Bonneville to appoint a cost-review committee. The work began last June. The committee included four Council members, two representatives from Bonneville and five experts in corporate financial management and energy. These included present and former executives of companies including West One Bank, Weyerhaeuser and Washington Energy Company.

The committee did not specifically address Bonneville's fish and wildlife restoration costs because they are set by a federal memorandum of agreement. Nonetheless, the committee recommended that the recovery effort be as efficient as possible.

More:

Visit the Council's Internet site, http://www.nwppc.org/cost_rev.htm.
Call 1-800-222-3355 or 503-222-5161 to receive a copy of the Committee's final recommendations.
Ask for document CR 98-2.

HORRIFIC PACIFIC

by John Harrison

El Niño may be affecting salmon in the ocean, or it may be something bigger

In a word, the Pacific Ocean was bizarre this past year. Water temperatures were warmer than normal, the water was unusually clear, phytoplankton — the bottom of the ocean food chain — was unusually scarce, and warm-water species moved north — mackerel, marlin, blue sharks.

The reason could be El Niño, the ocean-warming phenomenon that causes coastal waters off Washington and Oregon to resemble those off central California for a period of months every four or five years. Or, it could be something much bigger — something in the atmosphere over the North Pacific Ocean, something nearly invisible until it is viewed over a period of decades, not months.

Or, it could be both.

The National Oceanic and Atmospheric Administration recently issued a statement that the current El Niño, which began in the spring of 1997, and is expected to last through spring 1998, has been one of the two largest in the last 50 years. Many parts of the world are experiencing significant deviations from normal temperatures and rainfall, including the United States. There are unusually heavy rains in southern California, ice storms in New England, balmy weather in the Midwest, unusual dry spells in the Northwest, flooding in Africa and drought in Indonesia.

In September, two sport fishers hooked a marlin off the Washington coast, near Grays Harbor. Normally, marlins are found off the coasts of Mexico and Southern California. Other exotic, warm-water species were spotted from Oregon to Alaska, including California lizard fish, barracuda, a green turtle that washed up on the shore near Newport, Oregon, and even a mola mola, a giant sunfish from tropical waters, caught in a net in Southeast Alaska.

What's going on?

The first and most obvious answer is El Niño, the ocean-warming event that begins along the equator and sometimes leads to huge pools of warm water moving progressively northward as far as the Gulf of Alaska. For scientists who study ocean and atmospheric conditions, and the interrelation between the two, this El Niño leaves open a number of intriguing questions. For example, was El Niño to blame for the unusual coho salmon runs in Oregon's coastal rivers last year and the collapse of the Bristol Bay, Alaska, sockeye run? Was El Niño to blame for the lack of normal cold-water upwelling off the Oregon and Washington coasts, and the resulting lack of zooplankton, an important element of the ocean food chain?

There are more questions than answers. But scientists are studying environmental clues in the ocean and the atmosphere, piecing together bits of information in the hope of forging a better understanding of El Niño and its impacts.

One of those scientists is Bill Peterson, a researcher with the National Marine Fisheries Service in Newport. In May 1996, Peterson began sampling ocean

water at monitoring stations located one, three, five, 10 and 15 miles off Newport. With additional funding, Peterson recently expanded his monitoring to as far as 100 miles off the coast.

"Ocean conditions in 1997 began in a normal fashion, with (cold water) upwelling beginning in late March," Peterson said. "This was followed by a boom in zooplankton production in April."

ormally in the spring, strong winds blow south along the Pacific Northwest coast. This causes surface water to move out to sea, and colder water rises to take its place. Cold water from the depths is rich in nutrients, which encourages the growth of phytoplankton, the tiny aquatic plants that are the base of the ocean food chain. Tiny animals — zooplankton — feed on the phytoplankton and are, in turn, food for small fish such as anchovy and herring. These small fish are food for larger fish, including salmon. Typically, zooplankton production would continue through the summer so that, as Peterson put it, "the coho can fatten up by fall," when the adult fish that are ready to spawn migrate to their home streams.

But in 1997, the usual winds were light or non-existent, and there was little cold-water upwelling. As the upwelling slowed in the first week of May, so did production of phytoplankton and zooplankton.

Consequently, there was a domino impact on the ocean food chain and little food for salmon. Coho returning to coastal rivers were smaller than usual.

Was El Niño to blame for the unusual coho salmon runs in Oregon's coastal rivers last year?

The decline in upwelling and food production continued through the summer as ocean water temperatures increased, Peterson said. Upwelling resumed briefly from mid-July through mid-August, then stopped. There was little food production in response.

Meanwhile, sea surface temperatures rose steadily in April and May off the central Oregon coast, declined during the brief mid-summer upwelling, and then rose steadily until reaching a record temperature in late August of 18.5 degrees Celsius — 65.3 degrees Fahrenheit. That was one degree warmer than the warmest sea water temperature recorded in the same area during the last big El Niño, in the summer of 1983, and 6 to 8 degrees warmer than normal.

What happened?

The answer is not clear, and that is the reason for continuing research by Peterson and other scientists. But Peterson has a theory. Based on the abundance and species of small aquatic organisms captured in his water sampling, Peterson theorizes that the weak upwelling was caused by warm water from far at sea invading near-shore areas, effectively blocking deeper, colder water from rising to the surface.

But why did that happen?

"That's the scientific question," Peterson said. "Were the normal atmospheric pressure patterns that lead to coastal upwelling affected by the redistribution of atmospheric pressure systems along the equator as a result of El Niño?"

There's no answer yet, but researchers are looking to the sky as well as into the water for clues. Specifically, atmospheric scientists are investigating the possibility of a climate link — the scientific term is atmospheric teleconnection — between the North Pacific and the equatorial region.

Sea surface temperatures rose far above normal all the way to the Gulf of Alaska in 1997. This North Pacific warming may have been caused by temporary climate shifts in the region that were linked across thousands of miles to similar abnormal climate shifts along the equator brought on by El Niño — hence the teleconnection.

The unusual conditions had evident impacts on salmon and steelhead. "Bizarre and unpredictable impacts," said oceanographer Dr. Robert Francis of the University of Washington.

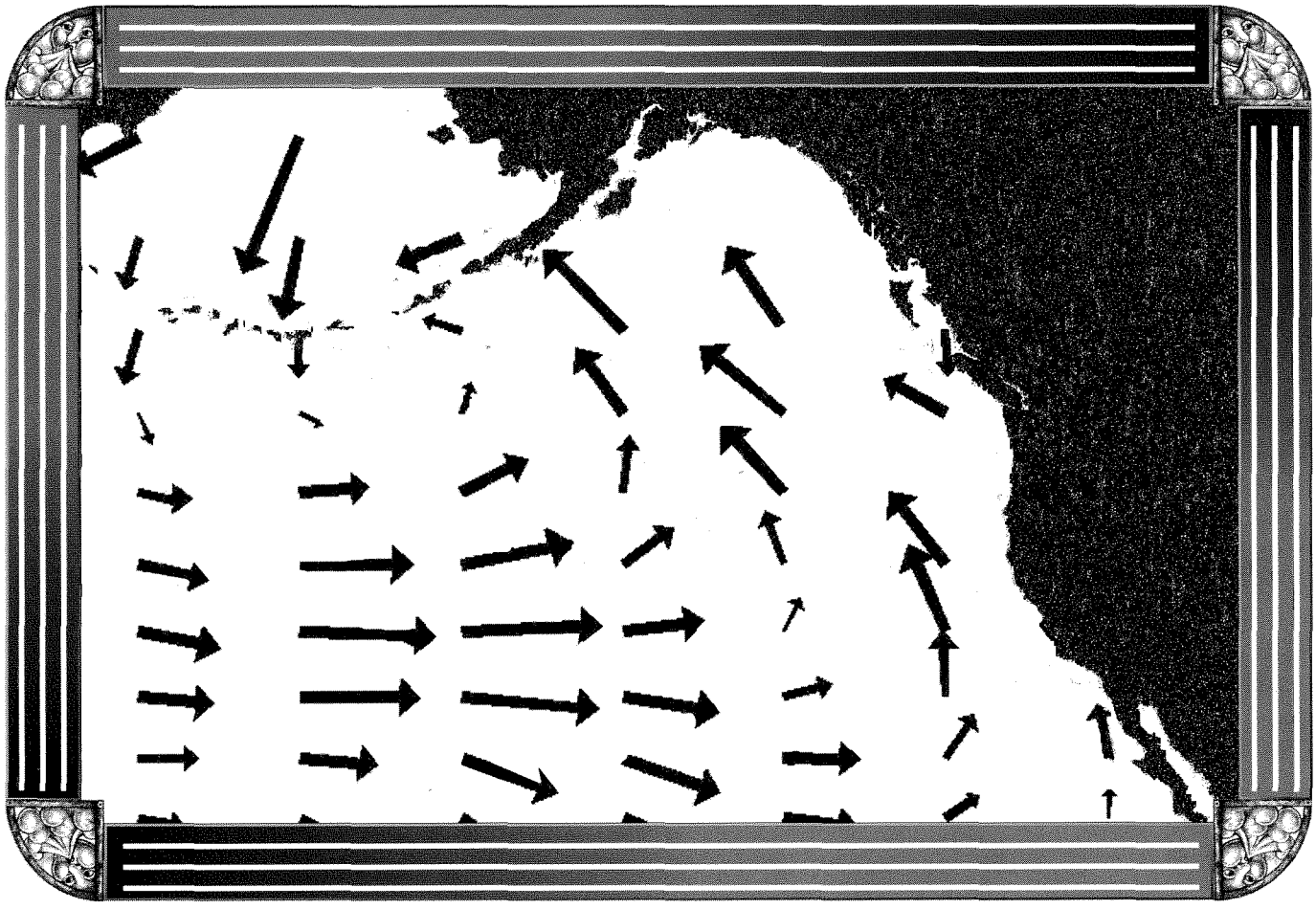
For example, Francis noted that only about half as many sockeye returned to rivers emptying into Bristol Bay, Alaska, as had been predicted, possibly as the result of El Niño-caused poor ocean feeding conditions. In Washington, hatchery steelhead runs returned much later than usual, and certain other salmon and steelhead runs returned from the ocean to spawn in small groups rather than the usual, single large group, said Dr. William Pearcy, an oceanographer

at Oregon State University. Additionally, the number of Oregon coho jacks — sexually immature fish that return to spawn a year early — was lower than normal, indicating a weak run in 1998. The 1997 jack count of coho was about the same as during the 1983 El Niño, Pearcy said.

While it seems clear that ocean feeding conditions are affected by the lack of cold water upwelling and the subsequent decline of zooplankton production, it also seems clear that the engine driving — or at least contributing to — these ocean changes is in the atmosphere. Francis points to a periodic, but decades-long, climate shift in the North Pacific that appears to explain why ocean temperatures warmed, why some parts of the country experienced an unusually wet winter and why some Alaskan salmon runs boomed while other salmon, including many along the West Coast, plummeted. Another University of Washington researcher, Dr. Steven Hare, named the climate shift the "Pacific inter-Decadal Oscillation (PDO)."

While El Niño occurs about every four years, the PDO appears to shift back and forth between its two phases about every 10 to 30 years. The PDO affects the strength and direction of winds that swirl around the Gulf of Alaska. These wind changes are related to weather and sea-surface conditions in the North Pacific.

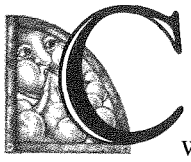
Hare describes the two phases of the PDO as negative polarity and positive polarity. When the



The arrows show wind direction in the Gulf of Alaska. Big arrows mean strong wind. Small arrows show light winds. When the Pacific inter-Decadel Oscillation is positive, the winds are strong. When the PDO is negative, the winds are light. Wind intensity affects ocean currents and as a result, feeding conditions for salmon.

Map illustration by Stephen Sasser from original provided by Steven Hare, International Pacific Halibut Commission, Seattle, Washington

PDO is positive, the counterclockwise winds circulate forcefully around the Gulf of Alaska. A positive PDO appears to be associated with enhanced zooplankton production — probably because the strong currents distribute zooplankton widely, not because of increased upwelling — and wet weather in Alaskan waters, Francis said. In the Northwest, the positive PDO appears to lead to reduced zooplankton production, diminished Northwesterly winds and drier weather.



onversely, a negative PDO brings a weaker wind circulation and drier weather to Alaska, but more precipitation and cooler weather to the Northwest. It is unclear whether upwelling improves off the Northwest coast when the PDO is negative, Francis said, but it might. One thing is clear, however: when the PDO is negative, anchovy, and possibly herring — food for salmon — increase off the Northwest coast. It is unclear whether the increased populations of these fish really lead to stronger salmon runs or whether salmon predators simply are attracted to the other fish, Francis said.

The PDO apparently affects weather across the United States, not just in the North Pacific. Since 1977, the PDO has been in a positive phase, causing cool weather in the Southeastern United States, wet winters in northern Mexico and the southern United States and warm, dry winters in the Columbia River Basin, according to a report by Hare and several associates, including Dr. Nathan Mantua, an atmospheric scientist at the University of Washington. Prior to 1977, the PDO was in a negative phase that began about 1947. During those 30 years, the Northwest's water supplies were 10 percent to 15 percent higher, and winter temperatures generally were cooler, compared to the period between the 1920s and 1940s, when the PDO was positive.

A periodic, but decade-long, climate shift in the North Pacific appears to explain why some Alaskan salmon runs boomed while other salmon, including many along the West Coast, plummeted.

Salmon apparently are affected by these changes in the ocean climate. This may be why coho and chinook salmon were abundant off the Washington and Oregon coasts prior to 1977, when the sea surface was cooler than it is today, and why Alaskan salmon stocks declined as the ocean cooled. Since 1977, the reverse has been true — warm water off Washington, Oregon and even Alaska, cooler water in the central North Pacific, and booming Alaskan salmon runs — with the exception of the 1997 Bristol Bay sockeye run. At the same time, salmon runs declined off the coasts of Washington and Oregon. The University of Washington researchers expect the PDO to shift back to negative within the next 10 years — good news, perhaps, for Pacific Northwest salmon.

Researchers are working to develop a method of predicting the PDO, which ultimately could aid long-term planning for fisheries, water supplies, agriculture and hydropower production. But this is difficult because the climate shift develops over such a long time. Mantua described the current knowledge of the PDO as similar to scientific understanding of El Niño15 years ago. A key question researchers hope to answer is whether the PDO restrains El Niño, or whether the PDO is a long-term response to the more periodic El Niño. Mantua's current thinking is that the PDO is a climate shift over the entire Pacific Basin that influences how El Niño develops, but the precise relationship is still a mystery.

So, are ocean conditions and impacts on salmon related to the PDO, to El Niño or to both?

In their recent report, published in the Bulletin of the American Meteorological Society, Mantua and his colleagues wrote that the climate patterns of El Niño and the PDO "are clearly related" in that the climate changes are similar, but the PDO lasts decades instead of months. Regarding

salmon, the researches noted, "The slowly varying time series of salmon catches examined in this study [more than 50 years] are much more coherent with the inter-decadal aspects of the PDO than the higher-frequency fluctuations in tropical [El Niño] indices. In the future, it seems likely that the PDO will continue to change polarity every few decades as it has over the past century, and with it the abundance of Alaskan salmon and other species sensitive to environmental conditions in the north Pacific and adjacent coastal waters."

According to the authors, fishery managers should take ocean conditions into account in making decisions and establishing policies. Goals such as doubling salmon runs "... simply may not be attainable when environmental conditions are unfavorable," the authors wrote. "Conversely, in a period of climatically favored high productivity, managers might be well-advised to exercise caution in claiming credit for a situation that may be beyond their control."

The Northwest Power Planning Council is required by a 1996 amendment to the Northwest Power Act to take ocean conditions into account when making its annual funding recommendations to the Bonneville Power Administration for projects to help restore fish and wildlife in the Columbia River Basin. Those projects, funded by Bonneville, implement the Council's Columbia River Basin Fish and Wildlife Program.

Salmon have survived changing ocean conditions for thousands of years, but the big decline in the runs occurred in recent decades.

"While the ocean environment may be difficult or impossible to influence through a fish and wildlife restoration program like the Council's, actions can be taken through the program to improve water quality and habitat in the estuary and near-shore environments," said Dr. Gustavo Bisbal, an oceanographer on the staff of the Power Planning Council. "These transition zones are critical to the survival of young salmon."

Equally important, the decline of salmon runs should not be blamed solely on ocean conditions, Francis said.

"I know some people will look at this data and say, it's the ocean's fault," he said. "I would say it's clearly not the ocean's fault. Salmon have survived changing ocean conditions for thousands of years, but the big decline in the runs occurred in recent decades. So you have to ask yourself, what's occurred during that time — what's different? And the clear answer is man's impact — dams, habitat destruction, overfishing, hatcheries. We can't use the ocean as an excuse to stop our efforts to improve passage, spawning and rearing conditions. When salmon return from the ocean, they need a healthy place to go."

For Columbia River Salmon

by John Harrison

Most runs in 1997 were larger than in 1996, but still below the numbers 10 years ago.

There was good news and bad news about Columbia River salmon in 1997. The good news was that many runs were stronger in 1997 than in 1996. The bad news was that most of the runs still were smaller, in terms of numbers of fish, than 10 years ago.

Here is a review of 1997 Columbia River salmon runs, as compiled by the Oregon Department of Fish and Wildlife, including comparisons to run sizes 10 years ago:

SPRING_CHINOOK:

The 1997 upriver spring chinook run of 114,100 adults was the largest return since 1986, and more than twice the size of the 1996 run of 51,500. The 1987-91 average return was 109,900. The lower river run, to the Cowlitz, Kalama and Lewis rivers, totaled 4,400 fish, about the same as in 1996, and well below the 1987-91 average of 24,000 fish.

SUMMER_CHINOOK:

The 1997 summer chinook return was 28,000 fish, which includes Snake River wild fish. This compares to 16,100 fish in 1996, and the 1987-91 average of 27,400 fish.

SOCKEYE:

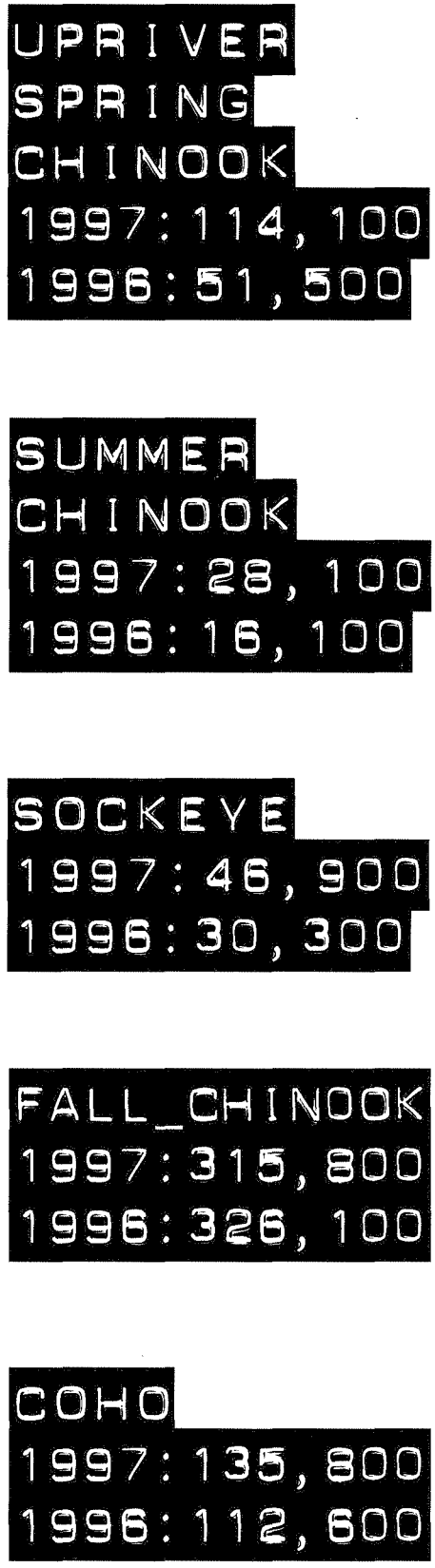
Some 46,900 sockeye returned to the Columbia in 1997, including 14,100 fish destined for Lake

NWPPC file illustration by Larry Milam

Wenatchee, 32,000 destined for the Okanagon River and Lake Osoyoos, and two destined for the Snake River (Redfish Lake). The total return in 1996 was 30,300 fish. The two Columbia River runs were far below the 1987-91 average of 83,700 fish. The Wenatchee component in 1997 was about twice the size of the 1996 run, which numbered 7,800 fish, and better than the 1987-91 average of 27,200 fish. The Okanagon River component, however, was much lower than the 1996 count of 22,500 fish. The 1987-91 average was 25,000 fish. In 1996, five Snake River sockeye were counted, and the 1987-91 average was 17.

FALL_CHINOOK:

The total fall chinook run numbered 315,800 fish, slightly smaller than the 1996 run of 326,100, and far below the 1987-91 average of 557,300 fish. The 1997 upriver bright component numbered 162,00 fish, better than the 1996 return of 143,200. But even the impressive 1997 return was below the 1987-91 average of 255,600. Other components of the run include: lower river (below Bonneville) hatchery, 55,000 fish (1996 return, 75,500; 1987-91 average, 181,500); lower river wild (primarily Lewis River), 7,800 (1996 return, 14,600; 1987-91 average, 31,700); Bonneville pool hatchery (primarily Spring Creek Hatchery), 29,000 (1996 return, 33,100; 1987-91 average, 23,800); and Mid-Columbia bright (hatcheries between Bonneville and McNary dams), 62,000 (1996 return, 59,700; 1987-91 average, 64,700).



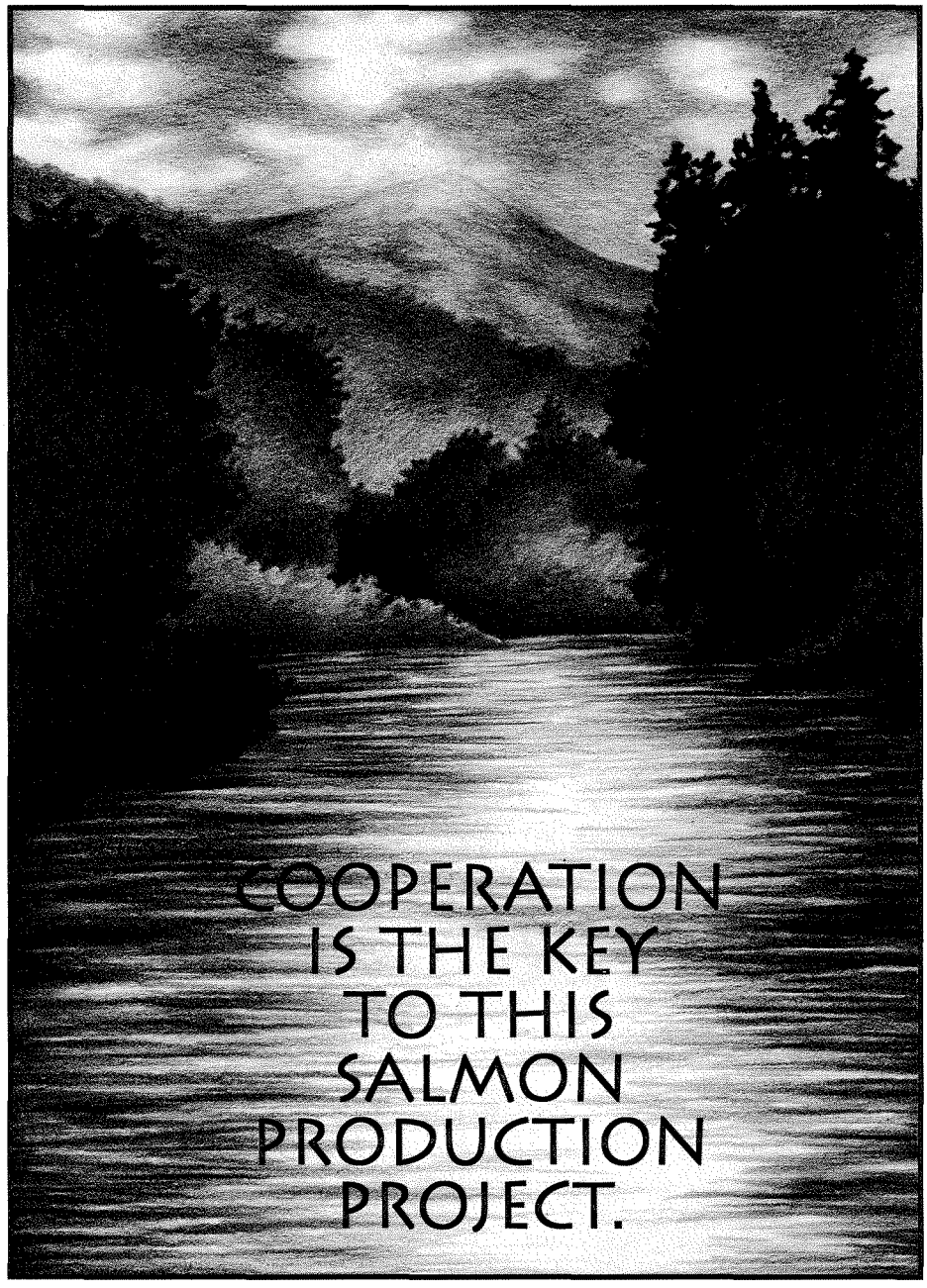
UPRIVER SUMMER STEELHEAD:

Summer steelhead returns above Bonneville Dam in 1997 included 221,200 hatchery and 35,700 wild fish. The run has two components. Group A steelhead spawn in tributaries in both the Columbia and Snake river basins, and Group B fish return to Snake River tributaries. The 1997 return included 29,000 wild Group A fish and 6,700 wild Group B fish. The Snake River fish were listed as threatened species in August 1997 by the National Marine Fisheries Service, and upper Columbia steelhead were listed as endangered species.

COHO:

Some 135,000 coho returned to the Columbia River in 1997, better than the 1996 return of 112,600, but far below the 1987-91 average of 560,900. There are two components of the run, an early-returning run and a late-returning run. The early run totaled 100,000 fish, and the late-returning run totaled 35,000. Both runs were larger than the 1996 returns (82,900 early and 29,700 late) and far below the 1987-91 average of 281,700 early and 279,200 late.

WATERSHED RECOVERY IN THE HOOD RIVER



NWPPC file illustration by Joan Barbour

by Carlotta Collette

It's been just over a decade since farmers and others in the Hood River Valley of north-central Oregon began to think of salmon and steelhead as important "users" of the waterways. This is an area where water generally serves agriculture. Spreading over 350 square miles, the Hood River Basin on the northern and eastern shoulders of Oregon's 11,300-foot Mount Hood supports some of the state's most productive fruit orchards, as well as other agricultural products.

But in the past decade, farmers used to diverting much of the water from the Hood River to irrigate their trees and other crops have been working in a broad-based collaborative effort to make their valley's streams more hospitable to salmon. They were brought to the task by the shared interest of the Confederated Tribes of the Warm Springs Reservation of Oregon and the Oregon Department of Fish and Wildlife.

Under the auspices of the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program, the

tribes and the department are taking a total-watershed approach to rebuilding Hood River populations of spring chinook, which disappeared from the valley in the 1960s, and summer and winter steelhead. They need the support of landowners and water users to make the complex set of activities they've planned fit into a unified and productive whole.

Jerry Bryan, from the Farmer's Irrigation District of West Valley, explains why the farmers have been interested in participating: "The wisest commonsense business perspective we could take was to take care of the fish. If we take care of the fish and the streams, it not only serves to improve streamflows, it ensures water the farmers need is there. It's a shift for us," he adds, "but our deep dark secret is it's the most cost-effective thing we can do."

THE TOTAL WATERSHED APPROACH

Work to make the three forks and numerous tributary streams of the Hood River more productive for salmon and steelhead began in the upper reaches, where there already was healthy habitat, but obstacles blocked fish passage into it. As the obstacles were cleared, fisheries workers moved downstream, improving additional habitat, screening irrigation diversions to keep fish out of the orchards, and fencing off streams from livestock.

Farmers along the way learned to conserve their water resources by enclosing open irrigation canals, exchanging their sprinklers for more efficient ones, and consolidating so they use fewer pipes overall. Salmon migration was further aided by correcting problems with the fish ladder at Powerdale Dam, four miles upstream from the river's mouth.

THE GOAL IS A FUTURE RUN OF ABOUT 15,000 ADULT SPRING CHINOOK AND SUMMER AND WINTER STEELHEAD TO SUPPORT BOTH INDIAN AND NON-INDIAN FISHERIES.

Then in 1992, project sponsors developed, and the Council approved, the Hood River Master Plan to expand the fish restoration efforts, including adding facilities to produce in hatcheries fish that are genetically similar to local wild stocks. The goal is a future run of about 15,000 adult spring chinook and summer and winter steelhead to support both Indian and non-Indian fisheries.

But the goal is not just numerical. The tribes and the state share the Council's concern that the genetic diversity of salmon and steelhead in the basin is protected, and that future Hood River salmon and steelhead are genetically similar to those that once flourished in the watershed. The theory is that native stocks adapted over time to the climate and other characteristics of the Hood River watershed. These survival traits should help the new young salmon and steelhead have a better chance of thriving as well. So brood stock selected for production in Hood River facilities is as close to native stocks as possible.

All salmon and steelhead heading up into the Hood River watershed are collected in special facilities at Powerdale Dam. There they are sorted, and a portion of the wild or natural run is taken to hatcheries to provide brood stock. Other wild salmon are released to spawn naturally above the dam. Some of these are fitted with tiny radio transmitters to help scientists track their movements and identify the chosen spawning habitat. Salmon that were produced at other hatcheries are returned to the mouth of the Hood River where they can be caught by fishers.

REARING LIKE WILD FISH

Salmon and steelhead produced in hatcheries in the basin and elsewhere for "replanting" into the Hood River watershed are treated as much like wild fish as possible. Like wild fish, they spend time in natural rearing ponds, instead of being released directly into the river, or worse, downstream into the Columbia River. When the young fish are ready, they leave the ponds on their own volition at

roughly the same time as wild smolts would migrate. Scientists are collecting data intended to show whether this "volitional release," and the use of acclimation ponds to reduce stress in the fish, result in a marked improvement in adult salmon and steelhead returns. Only two years of data have been collected to date, but the findings indicate the returns are nearly doubled when the fish are carefully acclimated.

Basinwide cooperation is evident throughout this restoration process. For example, land for the fish collection facilities at Powerdale Dam was provided by PacifiCorp, which operates the dam. Longview Fibre Timber Company provided the land for the acclimation ponds. Local landowners provided access for roads to the facilities.

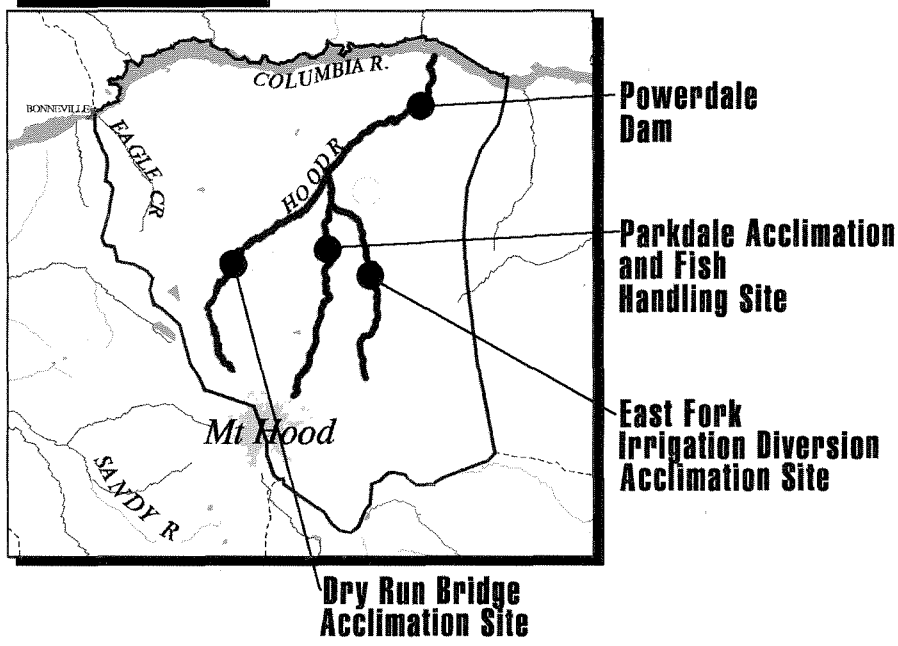
This kind of support is expected to continue as the project enters its latest phase: construction of adult fish holding and spawning facilities and juvenile acclimation ponds at Parkdale, on the Middle Fork Hood River. The Council recommended the Parkdale facilities for Fiscal Year 1998 funding by the Bonneville Power Administration because they are the culmination of the kind of cooperative, watershed-wide and genetically conscientious planning the Council hopes to see in other projects throughout the Northwest.

Acclimation ponds at Parkdale will benefit from the highest-quality water in the watershed — water from Roger's Creek, which pours out of a lava flow and runs steady, cold and uncontaminated. The new facilities are expected to cost about $4 million and be completed in July 1998.

When fully operational, the Hood River Production Program is expected to raise 250,000 spring chinook annually (with anticipated adult returns of 1,700 per year), 85,000 winter steelhead (returning 5,000 adult steelhead each year) and 150,000 summer steelhead (with 8,000 adults expected to return annually). Current runs are only a fraction of those numbers. Just 131 adult spring chinook, 1,551 adult summer steelhead and 930 adult winter steelhead returned to the Hood River in 1996.

Mick Jennings, project coordinator for the Warm Springs tribes acknowledges that there's a great deal of work to be done before the watershed sees 15,000 salmon and steelhead returning, but the team that's working on it gives him confidence. "This is so much bigger than just the two agencies that are coordinating it," he says. "It's the support and cooperation of so many people that will make this work."

Hood River Project Sites

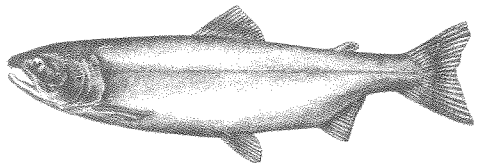


More...

For more information about the Hood River Basin Salmon Production Project, contact:

Mick Jennings,
Confederated Tribes of the Warm Springs Reservation of Oregon, 1-541-296-6866,
or
Chip Dale,
Oregon Department of Fish and Wildlife, 1-541-388-6363.

FISH for the YAKIMA RIVER'S FUTURE



This salmon hatchery will be successful if it puts itself out of business

John Harrison

Just west of the central Washington town of Cle Elum, in a 15-acre patch of cottonwood trees between Interstate 90 and the Burlington Northern Railroad tracks, lies a most unusual salmon hatchery. The small complex of wood-sided buildings with green metal snow roofs looks like a traditional salmon hatchery, complete with concrete raceways for rearing juvenile fish. But unlike a traditional hatchery, it will raise salmon for acclimation and release elsewhere in the Yakima River Basin, not from the hatchery itself.

It's unusual in other ways, too. Studies will be conducted to compare the survival of fish reared in conventional raceways with those raised in raceways lined with woody debris, rocks and gravel to simulate conditions in streams where salmon rear naturally. All of the raceways will contain fewer fish than raceways at a traditional hatchery, again to mimic natural conditions.

The hatchery is the cornerstone of the Yakima\Klickitat Fisheries Project, an effort to rebuild naturally spawning runs of salmon in the Yakima and Klickitat river basins. The project is co-managed by the Yakama Indian Nation and the Washington Department of Fish and Wildlife. The hatchery at Cle Elum is operated by the project's lead agency, the Yakama Indian Nation. The Bonneville Power Administration paid for the hatchery through the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program, as partial mitigation for the impact of hydropower dams on the basin's salmon.

The project is an experiment in "supplementation," which is the practice of taking wild adult salmon, spawning them at the hatchery and propagating the juvenile fish, and then releasing the juvenile fish into streams to rebuild naturally spawning salmon runs. The juvenile fish go to the ocean from these streams and return to the streams as adults to spawn. At a traditional salmon hatchery, the adult fish would return to the hatchery for artificial spawning.

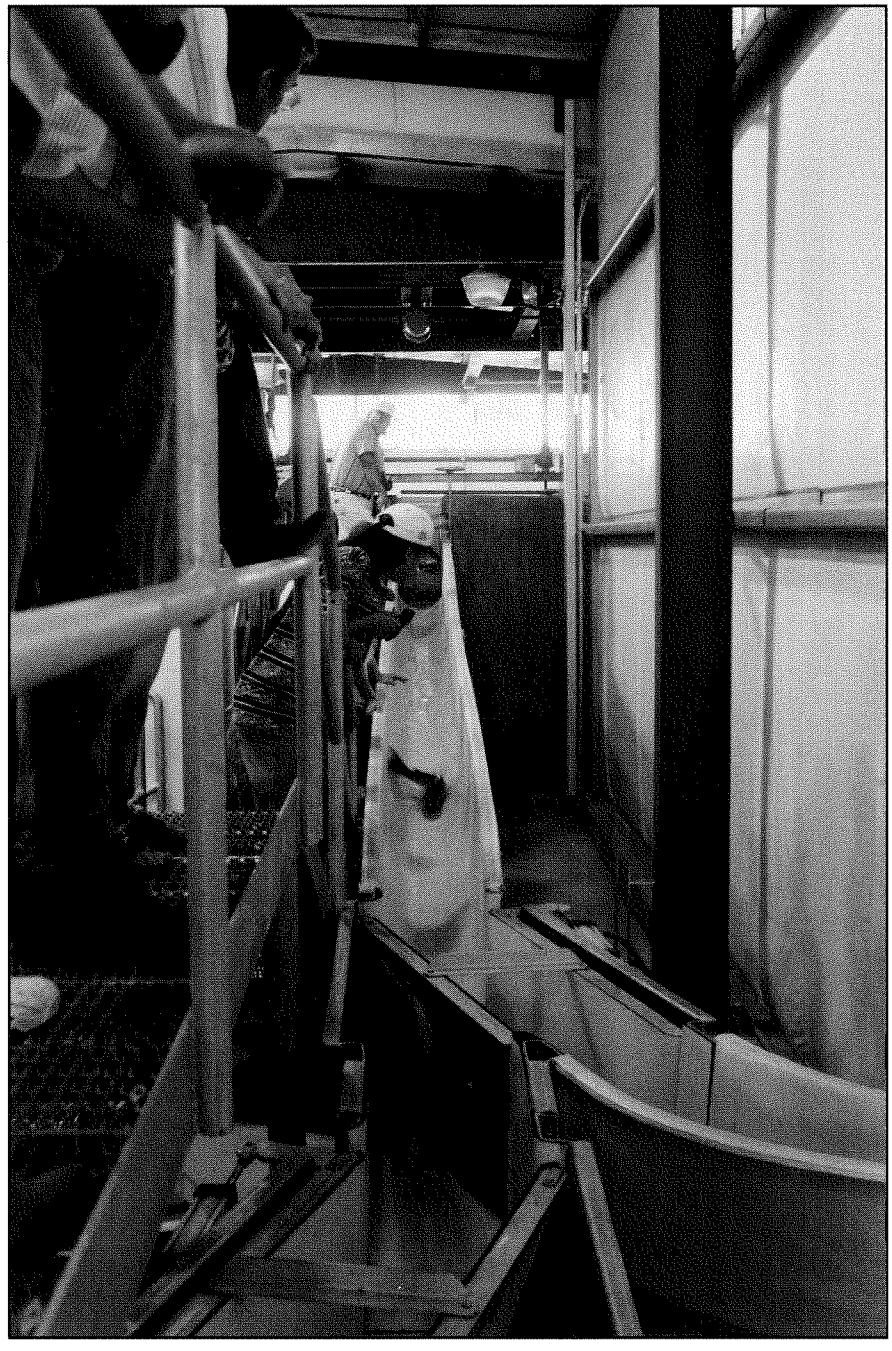
If the Yakima hatchery is successful in the long term, it no longer will be needed because naturally spawning salmon runs will have been rebuilt. Ultimately, the project managers hope to rebuild salmon populations to fishable levels.

"The judicious use of supplementation will serve the region well," eastern Washington Council Member Ken Casavant says. As former chairman of the Council's four-member Fish and Wildlife Committee, Casavant is following the hatchery's progress carefully. "I'm impressed that this facility will accommodate extensive research, and so it will produce both fish and education about fish production," he adds.

Construction at the Cle Elum hatchery began in the summer of 1996 and was completed last fall. A dedication ceremony was held in September 1997.

It has been a long journey to completion. In 1982, the Council's first Columbia River Basin Fish and Wildlife Program recognized the historic salmon productivity of the Yakima River and the destructive impact of years of agriculture, logging and hydroelectric development. The 1982 program included an entire chapter on the Yakima River Basin. The chapter concluded, in part: "The Council recognizes the critical importance of the Yakima River potential for natural propagation and as a system for releasing hatchery fish."

The 1982 program also called on the Bonneville Power Administration to fund the construction of a fish hatchery "...for the enhancement of the Yakima River Basin." The Yakima hatchery was an element of subsequent Council fish and wildlife programs in 1984, 1987 and 1994.



At Roza Dam, adult fish are collected for the hatchery in this sluiceway. Some fish are released back into the river. A computer determines randomly which fish will be kept and which released.

The experimental nature of the Yakima hatchery necessitated a thorough environmental analysis before construction could begin. That's one reason the project took 15 years.

The original hatchery design proved too ambitious — more than 30 acclimation ponds were proposed, whereas the current plan includes only three — and the project was scaled back. The hatchery and its affiliated facilities have cost about $15 million, plus an additional $7 million for the acclimation ponds. The hatchery is just one of many salmon enhancement efforts in the Yakima Basin

Photographs by John Harrison

that have been funded by Bonneville through the Council's fish and wildlife program, including fish passage facilities at numerous dams and water diversions. In all, Bonneville has spent nearly $90 million in the Yakima Basin during the last 15 years.

While that is unquestionably a large investment, there is no question the Yakima once was a prodigious salmon river and has the potential to be one again. Spring chinook once numbered about 200,000 fish of the total salmon run of about 600,000 to 800,000 in the river, said Mark Johnston, a biologist for the Yakama Indian Nation. But agricultural development, hydropower dams, overfishing and habitat destruction took a toll. Today, the spring chinook run averages 3,100 fish. Yakima summer chinook, which migrated during the height of the irrigation season, are extinct today.

The hatchery alone won't restore the Yakima's salmon. In its lower reaches, the river presents many dangers to salmon, primarily as the result of agricultural development. Yakima River water irrigates a multibillion-dollar agricultural industry, leading to problems of water pollution and low stream flows in summer. However, improvements are being made.

"A lot is being done with the agriculture community," said Dr. David Fast, research manager for the Yakama Indian Nation. "There are experiments in improved irrigation — getting away from the traditional practice of flooding fields, for example — and the water quality of agricultural return flows is being improved."

Innovative thinking and creative solutions also define the Cle Elum facility, the largest supplementation hatchery in the Columbia River Basin

This hatchery is not based on producing numbers of fish, but on enhancing natural production.

At the Cle Elum hatchery, juvenile salmon will be incubated from the eggs and sperm of wild Yakima River spring chinook salmon collected about 50 miles downstream at Roza Dam.

A computer program decides randomly which fish are taken for spawning at the hatchery and which are allowed to return to the river to continue the journey to spawning grounds. In this way, genetic diversity is encouraged. "We're not just selecting the biggest or prettiest fish," Johnston said.

Fish taken for the hatchery are transported in a special tank truck to the Cle Elum facility. The tribe plans to leave about 74 percent of the fish in the river at Roza Dam to spawn in the wild. The remaining fish — in 1997 it was 261 — will be captured for the hatchery.

"This hatchery is not based on producing numbers of fish, but on enhancing natural production," Johnston said.

To that end, each of the 18 raceways at the hatchery will hold 45,000 spring chinook salmon smolts in preparation for their release into the wild. That's far fewer than would be held in similar-sized raceways at a traditional hatchery — 650,000 per raceway would be typical, Fast said. The idea behind lower densities is to mimic the natural environment.

At feeding time in a traditional hatchery, hundreds of thousands of fish dart for the available food. That's not an appropriate survival behavior for fish in the wild, where they need to be wary of predators. "The fastest guy gets the food at a traditional hatchery, but there's a penalty for that in the wild," Fast said.

After a year in the raceways, the juvenile fish will be transferred to three acclimation ponds on tributaries in the upper part of the Yakima River Basin. The fish will leave the ponds on their own volition, just as they would in the wild.

Fast said the progeny of fish spawned in 1997 hatched this winter and will be released into the acclimation ponds in the winter of 1998-1999. They will return as adults in 2001.

Initially, the focus is on spring chinook in the upper Yakima River Basin. Through the hatchery program, the tribe and the Washington Department of Fish and Wildlife plan to supplement other populations of fish in the future, as well. Fast said there are three distinct populations of spring chinook in the Yakima River, and also steelhead, fall

chinook and coho salmon. All have declined over the years and could be supplemented through hatchery production.

At every step, the project co-managers will carefully monitor successes and failures. For example, every adult fish captured at Roza Dam is photographed and injected with a passive integrated transponder tag (PIT tags). The PIT tags will allow researchers at the Cle Elum facility to keep data, such as genetic studies and records of which fish are spawned with each other and where the progeny are released. Also at the Roza Dam collection facility, scale samples are taken for future genetic analysis.

At the Cle Elum hatchery, each of the 18 raceways will have a separate mark for juvenile fish. Fish from each raceway will be divided evenly among the three acclimation ponds. Downstream at Prosser, Washington — a two- or three-week journey for the fish — juveniles will be collected, counted and returned to the river.

Ultimately, the hatchery operators will be able to identify the parents of each fish, where each fish was released and how well the fish survived. Thus, the project will be able to document which fish, and therefore which production techniques, were most succesful, and share the results with other resource managers in the region. The findings will be incorporated into future fish production decisions.

Unlike a traditional salmon hatchery, where the emphasis is on numbers of fish produced, the emphasis of the Yakima Tribe's facility is on research and repopulating streams with naturally spawning salmon.

"We have developed a powerful statistical design in order to be able to compare production techniques," Fast said. "What we learn here will be transferable to other hatcheries."

More...

For more information about the Yakima/Klickitat Fisheries Project, contact:

Dr. David Fast, Fisheries Research Manager for the Yakama Indian Nation, 509-966-5291.

Dr. David Fast, fisheries research director for the Yakama Indian Nation, oversees the Cle Elum facility, where some of the raceways will contain woody debris and gravel to mimic natural stream conditions for juvenile fish.

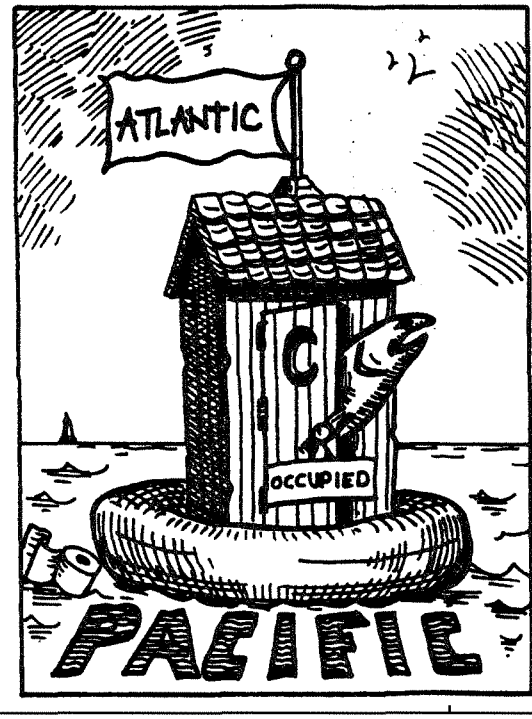
SHORTS

Northwest

Alaska salmon harvests much lower than anticipated. 1997 was projected to be a bad year for salmon fishing in Alaska, but few thought it would be among the worst in 20 years. Only about half of the projected salmon runs materialized, leaving the whereabouts of tens of millions of fish unknown. Scientists have few answers to what caused the runs to be so much smaller than projections. Ocean warming and deep-sea net harvests have been mentioned, but neither has been confirmed. (Source: *National Fisherman.*)

Northwest Energy Efficiency Alliance approves more than $10 million in new programs to benefit the region's consumers. Targeting the electronics industry, resource-efficient clothes washers and energy education, among other efforts, the Alliance board of directors has added 15 new efforts to the list of projects they are funding. The Alliance includes all Northwest electric utilities and state governments, as well as public interest groups and efficiency industry leaders. The utilities have contributed $65 million to the multiyear efforts, $36 million of which has already been committed. (For more information: contact the Alliance at 1-800-411-0834. Or visit the Alliance Internet site at: www.nwalliance.org.)

Farmed Atlantic salmon listed as "pollutants" in Washington waters. The Washington Pollution Control Hearings Board described the fish as "living" pollutants, when it added them to the state's list that includes factory discharges and raw sewage. The decision followed the accidental release into Puget Sound of about 300,000 Atlantic salmon whose net pen was being moved. The salmon are considered a threat to native Pacific salmon, and their wastes damage water quality, say environmentalists arguing for rigorous regulation of fish farming operations. (Source: *National Fisherman.*)



Council and the Bonneville Power Administration defer review of Section 6(c) policies. In an exchange of letters dated January 26 and February 25, 1998, the Council and Bonneville announced that they would defer for five years review of their respective policies implementing Section 6(c) of the Northwest Power Act. In 1986, the two agencies adopted policies for implementing Section 6(c), which directs Bonneville to test proposals for acquiring major resources for consistency with the Council's power plan. The agencies said they would review their policies every five years. Given the changes in the electric industry, however, it seems unlikely that Section 6(c) review will be called for in the foreseeable future. Both agencies are committed to further review should the need arise during the next five years.

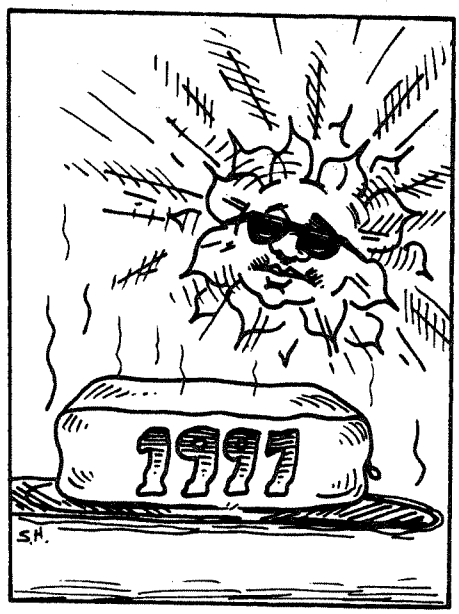
Nation

California Energy Commission set to implement renewable resources portion of the state's electricity industry restructuring legislation. California's $61.8 million annual renewable resources budget is open for bidding. The Commission has drafted project guidelines and a request for proposals solicitation packet. Priorities for this solicitation include public interest research and demonstration projects that advance renewable energy and other environmentally preferred generation, plus energy-related environmental research. For more information, visit the Commission's Internet site at: www.energy.ca.gov/energy/renewables. Copies of the RFP can be obtained at a related site: www.energy.ca.gov/research>. (Source: *Wind Energy Weekly.*)

Illustrations by Stephen Hayes

SHORTS

1997 was the hottest year on record, according to scientists at the National Climatic Data Center. The scientists noted that some of the extra heat was probably a result of El Nino, and that the rise was not significant over the next highest year. Nonetheless, they agreed that 1997 continues the trend of ever-increasing temperatures, with the 1990s being the hottest decade in weather recording. In a related story, a *New York Times* poll found that Americans are concerned enough about global warming that 65 percent of those polled said the United States should take steps now to cut emissions of gases that appear to cause the warming. Poll respondents said the United States should act whether or not other countries take similar actions. (Source: *The New York Times.*)



Declining energy costs pushed wholesale prices down 0.7-percent in January, the biggest one-month drop in four years, the U.S. Department of Labor reported. Prices were pushed down by a 3.7-percent decline in energy costs.
The January decline continued a steady downward trend in energy prices that began in October 1997. Energy analysts noted that the declines continued, with January's being the largest, despite growing concern over a war with Iraq that could affect oil shipments and prices, the Department reported.
(Source: *Associated Press.*)

CALENDAR

April 7-8 Northwest Power Planning Council Meeting, Council central office, Portland, Oregon. For more information, contact the Council central office at 800-222-3355.

April 29-30 1998 Utility Strategic Marketing Conference, Omni Rosen Hotel, Orlando, Florida. For more information, contact June Appel, 610-667-2160 or e-mail: appelj@earthlink.com.

April 27-May 1 Deregulating Your Thinking Then and Now, NWPPA 1998 Engineering and Operations Conference, DoubleTree Bellevue Hotel, Bellevue, Washington. For more information, call Northwest Public Power Association, 360-254-0109.

April 30-May 1 Clark Fork Watershed Festival, Missoula, Montana. For more information, call Wendy Moore, 406-273-2446, or e-mail at moore@montana.com.

May 6-8 The National Marketplace for the Environment, Los Angeles Convention Center, Los Angeles, California. For more information, call 800-334-3976.

May 19-20 Northwest Power Planning Council Meeting, Washington. For more information, contact the Council central office at 800-222-3355.

July 23-26 Toward Tomorrow Festival, Westfield State College, Westfield, Massachusetts. For more information, contact the Northeast Sustainable Energy Association, 413-774-6051, or e-mail nesea@nesea.org.

August 11-12 Northwest Power Planning Council Meeting, Oregon. For more information, contact the Council central office at 800-222-3355.

August 23-28 Energy Efficiency in a Competitive Environment, Asilomar Conference Center, Pacific Grove, California. For more information, contact the ACEEE Summer Study Office, 202-429-8873.

Northwest Power Planning Council

www.nwppc.org

Idaho

Mike Field
Todd Maddock
P.O. Box 83720
Boise, Idaho 83720-0062
Telephone: 208-334-2956

Montana

John Etchart, Chair
Stan Grace
Capitol Station
Helena, Montana 59620
Telephone: 406-444-3952

Oregon

620 S.W. Fifth Avenue, Suite 1025
Portland, Oregon 97204
Telephone: 503-229-5171

John Brogoitti, Vice Chair
11 S.W. Byers Avenue
Pendleton, Oregon 97801
Telephone: 541-276-0657

Washington

Mike Kreidler
1110 Capitol Way South
Suite 404
Olympia, Washington 98501
Telephone: 360-664-4030

Ken Casavant
Hulbert Hall-Room 211
Washington State University
Pullman, Washington 99164-6213
Telephone: 509-335-2816

Central Office

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204
Telephone: 503-222-5161
Toll Free: 1-800-222-3355
Executive Director: Steve Crow
Public Affairs Director: Mark Walker

The Northwest Power Planning Council is required by an Act of Congress to develop a program to protect, mitigate and enhance the Columbia Basin's fisheries and a regional electric energy plan that provides a reliable electricity supply at the lowest cost. For further information, see Pacific Northwest Electric Power and Conservation Act--Public Law 96-501.

NORTHWEST ENERGY NEWS

Northwest Energy News is printed with soy-based inks on recycled paper that is 50-percent de-inked fiber, including 10-percent post-consumer waste.

Executive Editor: Carlotta Collette
Art Director: Stephen Sasser
Information Officer: John Harrison
Involvement Coordinator: Jim Middaugh
Editorial Assistant: Judi Hertz

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. Not all publications are available immediately, but they will be sent to you as soon as possible. Nearly all Council publications are also available at *http://www.nwppc.org* or use the new automated information service: call 1-800-222-3355 and ask for extension 700.

Publications

☐	97-15	Downstream Passage for Salmon at Hydroelectric Projects in the Columbia River Basin: Development, Installation and Evaluation
☐	97-17	Draft Scoping Document for the Columbia Basin Artificial Production Review
☐	97-18	Draft Scoping Document for the Review of the U.S. Army Corps of Engineers Mainstream Capital Construction Program
☐	IEAB 97-2	IEAB Review of Local Economic Impact Studies
☐	CR98-1	Draft recommendations: Cost Review of the Federal Columbia River Power System: Report of the Cost Review Management Committee
☐	ISAB 98-1	Proposal Reviewed: Comparative Survival Rate Study of Hatchery PIT Tagged Chinook, prepared for the Council by the Independent Scientific Advisory Board
☐	98-TB1	February 3, 1998, Transition Board summary
☐	98-1	Columbia River Basin Fish and Wildlife Program Management Review of Contracting Processes, December 1997. Prepared for the Council by Moss Adams LLP
☐	98-2	Production Review Committee Report, January 30, 1998
☐	98-3	Transmission System Impacts of Drawing Down John Day Dam

Mailing List

☐ Please ***add*** my name to the mailing list for ***Northwest Energy News***

☐ Please ***delete*** my name from the mailing list for ***Northwest Energy News*** (please include the 12-digit number next to your name on the mailing label).

Name_____

Organization _____

Street _____

City/State/Zip _____

(Or call the Council's central office, 503-222-5161, or toll free 1-800-222-3355.)

Northwest
Power Planning
Council

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204

www.nwppc.org

BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 11
PORTLAND, OR

from the CHAIR

Since the Northwest Power Act was amended in 1996, the Power Planning Council has worked hard to improve accountability for the money we are all spending to rebuild fish and wildlife populations in the Columbia River Basin. I'd like to take this opportunity to bring our readers up to date on specific actions we've taken in that regard.

The 1996 amendment – known as the Gorton Amendment after its sponsor, Washington Senator Slade Gorton – called for increased scientific and economic scrutiny for the actions the region undertakes on behalf of our fish and wildlife. In response, the Council assembled independent scientific and economic advisory panels to assist us. In our selection of projects to recommend for funding in Fiscal Year 1998, we relied on the advice of these experts. We also included more opportunities for public review of proposed fish and wildlife recovery projects.

In early summer 1997, the Council retained the accounting firm of Moss Adams to conduct an independent financial audit of the Bonneville Power Administration's fish and wildlife contracting and accounting procedures. We joined Moss Adams in releasing their findings in February. The firm pointed out several areas where both Bonneville and the Council need to improve, and Bonneville has already responded by setting new planning, contracting and project management standards.

The fish and wildlife audit comes on the heels of a Council-coordinated review of Bonneville's other costs. That review, which was assisted by a blue ribbon panel of business and financial experts, recommended about $137 million in annual savings at the agency. These savings will assist Bonneville in its efforts to reduce its prices as it prepares to engage its customers in a subscription process for the 2002–2006 contract period. With Bonneville being the primary source of funds for fish and wildlife activities in the Basin, it is essential that Bonneville remain financially healthy if it is to continue in that role.

In addition to these activities, at the request of Congress, the Council is leading reviews of the region's fish hatcheries and of proposed modifications to the federal dams on the Columbia and Snake Rivers. Those reviews will be completed later this year. All these efforts will help ensure that the region will earn a better return on its substantial investment in fish and wildlife recovery activities.

I also want to take this opportunity to mention that this is the last issue of Northwest Energy News that bears the workmanship of its longtime editor and lead writer, Carlotta Collette. Over the 14 years she has worked among us, she has brought clarity (and good grammar) to virtually all of our key publications. She has taken technical subjects and shaped them into readable publications that can capture the interest of audiences who are not paid to follow our activities. Carlotta is taking her red pen, keyboard and camera out into the world to explore other subjects in addition to the energy and fish and wildlife fields. We look forward to seeing her byline and wish her the very best.

John N. Eskel