

N O R T H W E S T
ENERGY NEWS

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Northwest Power Planning Council

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The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

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Editor's Notes

The turning of the year almost always brings changes, and this year was no exception. The Northwest Power Planning Council has two new members to introduce — one in Idaho and one in Oregon — and new Council officers (elected in December).

In Idaho, newly-elected Governor Cecil Andrus appointed James Goller to replace member Larry Mills, who retired. Oregon's new Governor Neil Goldschmidt recommended former Oregon Secretary of State, Norma Paulus, to take over from Don Godard, whose term expired January 31, 1987. Both new appointees must be confirmed by their state legislatures.

About the time you'll be reading this, the Council will be voting on the new Columbia River Basin Fish and Wildlife Program. It has taken more than a year of discussions and

debates to reach this point. To give you a taste of that dialogue, Paula Walker pulled together a smorgasbord of comments the Council received on its Draft Amendment Document. Our next issue will feature the new program and serve as a summary of it.

One stalwart participant in Northwest fish and wildlife politics, from the early days of the development of the Northwest Power Act to the present, is Tim Wapato, executive director of the Columbia River Inter-Tribal Fish Commission. Tim is the subject of this issue's interview.

Council staff in Idaho (Beth Heinrich) and in Washington (Carol McAllister) also contributed to this issue.

COVER ILLUSTRATION: This issue's cover illustration is the work of Portland artist Christy Wyckoff. Christy's lithograph, "Hood River Pair," is intended as a side-by-side piece, as shown below.



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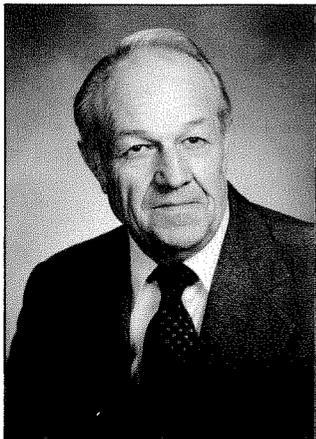
In The News

Two new members appointed to Council

February brought two new faces to the Northwest Power Planning Council — James Goller of Idaho and Norma Paulus of Oregon.

On January 13, Idaho Governor Cecil Andrus appointed Goller to a two-year term as Council member. He will succeed Larry Mills, who is retiring after five years on the Council.

On January 16, Oregon's Governor Neil Goldschmidt picked his former rival in the gubernatorial race, Paulus, to succeed Donald Godard, whose term expired January 31.



Goller, an Idaho native, has spent the last six years as chief of staff for Senator James McClure, R-Idaho. Goller managed McClure's first campaign for U.S. representative for Idaho's 1st Congressional District in 1966 and has been a member of McClure's staff ever since. As chief of staff, Goller managed McClure's Idaho offices and supervised the senator's Washington, D.C. staff, including staff members of the U.S. Senate Committee on Energy and Natural Resources and the U.S.

Senate Committee on Appropriations.

Gov. Andrus described Idaho's new Council member as "extremely knowledgeable on energy and natural resource issues. He will be an outstanding addition to the Council."



Paulus, a Salem, Oregon, lawyer, served as secretary of state in Oregon from 1977 to 1985. Prior to that she was a member of the Oregon legislature from 1971 to 1977. Paulus will be the first woman appointed to serve on the Council.

Goldschmidt, in his inaugural address, praised his new appointee, saying that his respect for her grew during the campaign. Through his spokesman, Goldschmidt said that he picked Paulus because she "has a good environmental background."

Both appointments require the approval of their respective state legislatures.

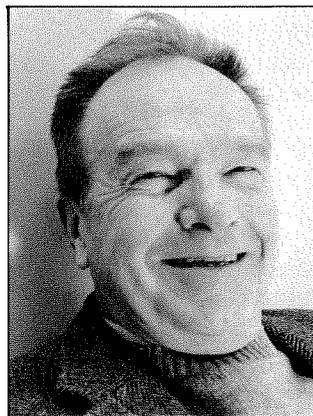
—Beth Heinrich, Idaho

—CC, Oregon

Power Council elects new officers

Robert Duncan of Oregon has been elected chairman of the Northwest Power Planning Council, and Morris Brusett of Montana was elected vice chairman at the December Council meeting in Seattle, Washington.

As a member of the U.S. Congress, Duncan participated in the legislation that culminated in the Northwest Power Act. This legislation authorized creation of the Council by the Northwest states. Duncan represented Oregon's 4th Congressional District from 1963-67 and the 3rd Congressional District from 1974-1980. He also served three terms in the Oregon Legislature and was speaker of the Oregon House twice.



Duncan is a lawyer and, prior to his appointment to the Council by Governor Vic Atiyeh in January 1986, had been at various times a partner in the Portland law firms of Schwabe, Williamson, Wyatt, Moore and Roberts; Lindsay, Nahstoll, Hart, Duncan, DeFoe and Krause; and the Medford firm of McAllister, Duncan and Brophy.



Brusett was director of the Montana Department of Administration when he was appointed to the Council by Governor Ted Schwinden in January 1985. As director, he served as treasurer of the state and chairman of the Governor's Capital Finance Advisory Council. A certified public accountant, Brusett also served for 14 years as Montana's legislative auditor from 1967 to 1981. He was responsible for conducting financial and program audits of all state agencies.

Members of the Council are appointed by the governors of Oregon, Montana, Washington and Idaho. Officers of the Council are elected by the eight Council members. Both the Duncan and Brusett elections were unanimous.

—DM

Supreme Court declines rehearing on Council's constitutionality

Calling it a "victory for the citizens of the Northwest," Northwest Power Planning Council Chairman Robert Duncan applauded the U.S. Supreme Court's decision not to review a judgment upholding the

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Council's constitutionality. "This preserves the balance of power in Northwest energy planning that Congress intended," Duncan added.

The suit was originally filed with the U.S. Court of Appeals for the Ninth Circuit by the Seattle Master Builders in July 1983. The Master Builders' suit challenged the legality of the Council's model conservation standards.

A central issue in the Master Builders' petition was the question of the Council's constitutionality. Citing the appointments clause of the U.S. Constitution, the Master Builders argued that if the Council has authority over federal agencies, such as the Bonneville Power Administration (the agency that implements the model standards), Council members should be appointed directly by the president, not by the governors of each state.

The Council argued that it is an interstate compact, not a federal agency and, therefore, not subject to the appointments clause.

The governors of the four Northwest states that make up the Council also expressed concern that the effect of a court decision against the Council would be to "remove any constraints which the Northwest states can exercise over Bonneville actions." The governors referred to the balance of authority that was central to the development of the Northwest Power Act, which led to the formation of the Council.

In the Act, Bonneville was granted expanded authority to acquire electri-

cal power resources. In return, the Northwest states, through their representatives on the Council, were given the right to review major Bonneville resource acquisitions to ensure that they are in the region's best interest.

"There would have been no Northwest Power Act had it not been for the strong role granted our states through the Council," the governors wrote.

In April 1986, the Ninth Circuit found in favor of the Council on all issues raised in the suit. The Master Builders then brought their concerns to the Supreme Court, where they were also rejected.

—CC

Bonneville invites public response to proposed rate hike

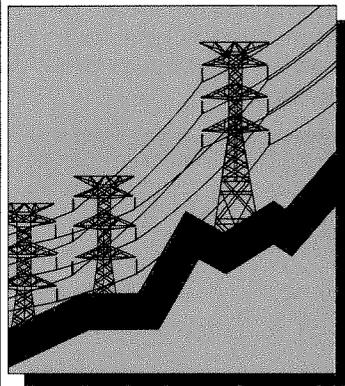
The Bonneville Power Administration is seeking comments on its proposal to increase electric power rates to its customers. If the rates are approved by Bonneville Administrator Jim Jura and the Federal Energy Regulatory Commission, they would become effective for a two-year period from October 1, 1987, through September 30, 1989.

The proposed rate change, announced in late December, would amount to an average wholesale rate increase of 13.1 percent. Public and private utilities that purchase power from Bonneville could pass on that increase to the region's ratepayers.

Bonneville officials said the increase was necessary for the agency to repay the U.S. Treasury, with interest, for funds the federal gov-

ernment has spent on electric power generation and transmission in the Pacific Northwest.

Officials said Bonneville's revenues have been adversely affected by



reduced oil and gas prices and the depressed economic condition of aluminum companies, the agency's main industrial customers. A cutback in Bonneville's power sales to California utilities was attributed to the drop in oil and gas prices, because those utilities have found it cheaper to operate their own thermal generators than to buy power from Bonneville. The combined effect of the drop in power sales to both California utilities and the region's aluminum companies was a \$247 million loss of anticipated revenues, according to Bonneville.

For the first time, the Bonneville rate proposal includes a contingency provision that would allow the federal power marketing agency to increase rates on an emergency basis by up to 10 percent during the first nine months of 1989, if

revenues fell substantially during that period.

When the proposed rate structure was announced, several of Bonneville's major customers expressed concern that the contingency provision might allow the agency too large a hedge against future revenue shortfalls, at the customers' expense.

For information on how to provide comment on the proposed increase, call Bonneville's public involvement office toll-free: 800-547-6048, in Washington, Idaho, Montana, Utah, Nevada, Wyoming and California; 800-452-8429, in Oregon outside of Portland; or 230-3478, in Portland.

—PMW

Power Council amends model standards

The Northwest Power Planning Council amended its model conservation standards to allow both builders and utilities greater flexibility in reaching the levels of energy efficiency specified by the standards.

The standards set energy efficiency levels for new electrically heated homes and all new commercial buildings. They have the potential to save the Northwest the equivalent of 1,200 average megawatts of electricity over the next 20 years — more than enough to supply the electricity needs for a city the size of Seattle.

The amendment allows builders to use the technique of vapor barrier wraps with heat recovery ventilators. However, it is

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no longer a mandatory requirement. The change was made in response to a Bonneville Power Administration study and the Council's own analysis that showed improved building techniques could achieve levels of energy efficiency at a lower cost than the vapor wrap/heat recovery ventilator package.

will establish a method for assessing performance in 1988, when more data is available. The Council will then reconsider whether it will impose the performance surcharge.

The model conservation standards have been controversial. Many people considered them too stringent. The amendment, however, represents a consensus among Bon-

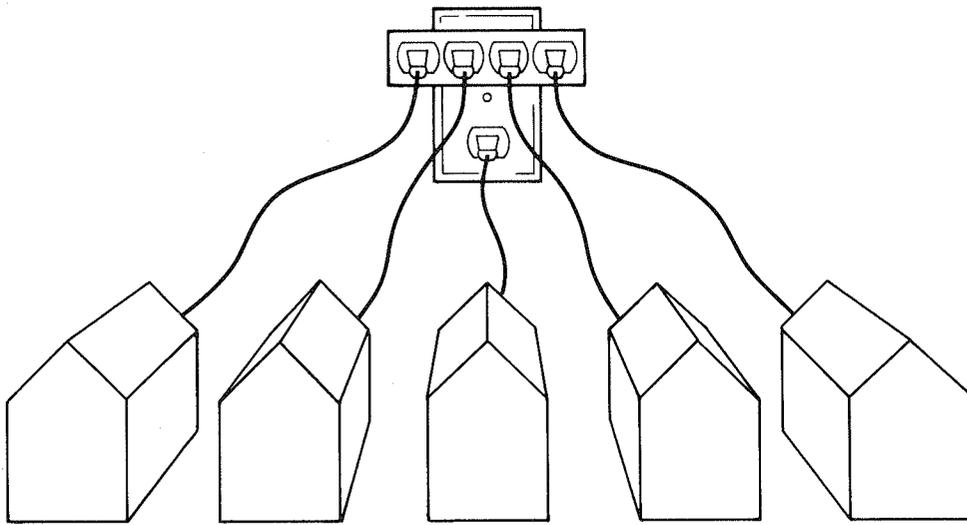
Northwest fares well in energy awards

The city of Tacoma, Washington; the Umatilla Electric Cooperative Association in Hermiston, Oregon; and the Portland, Oregon, public schools are all winners in a

windows and other energy-saving construction details to new homes.

The Umatilla County utility won recognition for innovative water- and electricity-conserving techniques for farmers who rely on irrigation. Umatilla County has over 50,000 acres in irrigated agricultural production.

The utility sponsored programs that linked farmers to a satellite weather station via personal computers. The weather station helped farmers hone their watering regimes to suit specific crops and climatic conditions.



In another change, the Council did not recommend a surcharge for utilities which failed to reach a previously specified level of market penetration for energy-efficient housing in the next two years. The surcharge is a 10 percent additional charge on power that utilities buy from Bonneville. Utilities will still be subject to a surcharge if they do not submit and implement a "good faith" plan within six months for achieving the standards.

The performance surcharge was deferred because of the current difficulty in obtaining data about market penetrations for the new building technology. The Council

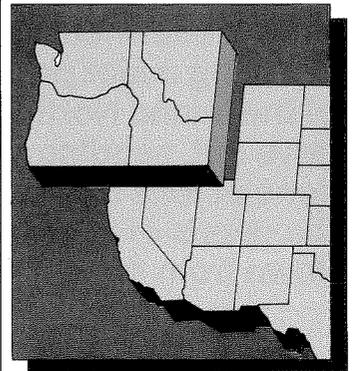
neville, Northwest utilities and state and local governments who supported the amendment. "It's important to point out that the standards themselves — that is, the level of energy efficiency — are not significantly different from the first standards adopted in 1983," said Edward Sheets, executive director of the Council.

Sheets pointed out that the standards are a good investment for consumers. "These standards will cut the heating costs of a new home by 50-to-60 percent. This energy efficiency provides a much better rate of return for consumers than the stock market or treasury bills."

—DM

national competition honoring energy innovators, sponsored by the U.S. Department of Energy. The three were among 17 special merit award recipients nationwide who were chosen from a field of 128 finalists. The finalists included 10 Northwest nominees from Montana, Oregon and Washington.

Tacoma's award came as a result of that city's adoption of the model conservation standards for new electrically heated buildings. The model standards, which took effect in Tacoma in June 1984, are building codes designed by the Northwest Power Planning Council to cut electricity use by adding thicker insulation, storm



The Portland public schools shared their award with Portland General Electric. Together, the schools and the utility operated a two-part program that included curriculum for science, home economics and industrial arts — all focusing on energy efficiency. Students in the program then designed and constructed an energy-conserving model home.

—CC

Continued on page 34



by Carlotta Collette

The leading theory has it that about 18,000 years ago an enormous lake covering major portions of the inland Northwest gave out, sending millions of tons of water and the debris of centuries down from the North. As

the flood poured across the region, it unburdened itself, leaving off the heavier rocks first and later, creating the smooth sands of the Washington Palouse region where it spilled the fine stuff. In the middle, between the

boulders that tumbled out of the lake and the waves of sand like the sea bottom, the wake of this lake called Missoula left gravel hundreds of feet thick in some places.

Because the gravel is mortarless, naturally occurring soil gases percolate among the stones, and houses and other buildings that rest on the gravel are likely to have an ebb and flow of these gases moving through them. The gases would be mostly harmless, except that in the Spokane Gravel, as this area in eastern Washington and northern Idaho is called, there are uranium deposits beneath the gravel. Uranium-rich soil and rock formations are the most likely to contain and give off the odorless and colorless gas known as radon.

Radon is a radioactive soil gas, the by-product of decaying radium and uranium. This gas continues to decay, becoming a minuscule solid that can adhere to dust parti-

cles and enter the lungs. Inside the lungs, the radioactive particles, called radon progeny, also continue to decay, giving off radiation and exposing the lungs to cancer risks.

There is nothing new about radon; it has been present in homes and other buildings since buildings were first constructed.

There is nothing new about radon; it has been present in homes and other buildings since buildings were first constructed. But health officials began to be concerned in the mid-1970s, when there was fear that the move to make homes more airtight, and thus more energy efficient, might concentrate the radon and other indoor air pollutants, such as cigarette smoke, in some homes.

In 1983, the Northwest Power Planning Council released its first 20-year electrical power plan for the region. The 1983 Power Plan called on the Bonneville Power Administration, which implements a large portion of the plan, to "acquire" the low-cost electricity made available through energy conservation in Northwest build-



ings. In response, Bonneville began to weatherize thousands of homes throughout the region as well as promote the construction of new, well-insulated houses.

As part of this major conservation endeavor, Bonneville started monitoring houses in its programs for possible indoor air problems. It wasn't long before such problems began to surface. But they surfaced in both weatherized and non-weatherized homes and in unpredictable concentrations.

Present to some degree in nearly all soils and many rocks, radon is considered by the U.S. Environmental Protection Agency (EPA) to be acceptable in low concentrations. These concentrations are measured in picocuries per liter of air. One picocurie per liter is equal to about two atoms of radon gas decaying each minute in about a quart of air.

To determine the health risks associated with long-term exposures to various levels of radon, the EPA studied the health records of miners who worked underground their whole lives. These miners showed higher incidence of lung cancer when compared with health statistics of the general public. But there was no way to tell whether radon or some other

source caused the higher incidence of cancer, and there is still no conclusive evidence that living in a home with average concentrations of radon increases cancer risks.

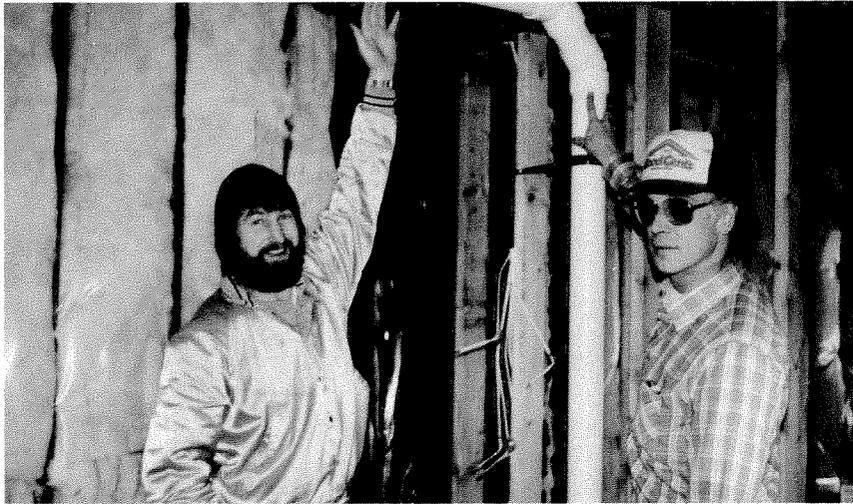
Still, scientists with the Lawrence Berkeley Laboratory at the University of California have estimated that radon in some undefined concentrations can be blamed for between 5,000 and 20,000 lung cancer deaths in the United States each year—5 percent of all lung cancer deaths in this country. (Cigarette smoking, by comparison, is considered responsible for about 80 percent of American lung cancer deaths.) Studies are under way in several countries, including the United States, to quantify the health prob-

Scientists have estimated that radon can be blamed for between 5,000 and 20,000 lung cancer deaths each year.

lems that may be associated with higher concentrations of radon in indoor air.

Until these studies can produce more conclusive evidence, the EPA has settled on a level of 4 picocuries of radon per liter of air as an acceptable upper limit. But other agencies have set different "acceptable limits" based on their readings of the potential health risks.

In Florida's phosphate mining regions, 2 picocuries is considered cause for remedial action to reduce the concentrations. The U.S. Mine Safety and Health Administration determined that miners could be safely exposed to up to 16 picocuries. In Sweden, where more than 47,000 houses and other buildings have been monitored for radon, there is a national goal of reducing that country's average radon concentrations by half. With nearly 40,000 homes being monitored, Bonneville is second only to Sweden in the scope of its radon monitoring. The agency concluded that 5 picocuries of radon per liter of air was the level at which action should be taken.



Spokane builders Jerry Morrison (left) and John Anderson (right), of the Inland Northwest Energy Efficient Building Association, point out ducting they've installed in a radon-troubled home. The pipe draws air from upper stories of the house to pressurize the basement, keeping radon outside.

Radon and Homebuilding: New Group To Administer an Ounce of Prevention

Educating the public about radon is a major goal of the recently formed Inland Northwest Energy Efficient Building Association in Spokane. The organization, composed of homebuilders, architects, utility representatives, subcontractors, radon specialists and others, was officially formed on October 1, 1986, although the group has been meeting since June 1986.

The association intends to convey the message that with radon, an ounce of prevention is worth a pound of cure when it comes to building a new home.

"We view radon as a problem not related to energy-efficient construction but as a health problem to be dealt with on an individual basis," says Jerry Morrison, the group's president. "We would like to make the public aware of what radon is and what can be done about it, whether retrofitting existing houses or building new ones. It's easier and less costly done during construction than as a retrofit."

Members of the association hope to establish a forum for communication, quality control and cooperation among contractors, designers and suppliers in the inland Northwest. Eastern Washington Northwest Power Planning Council member Tom Trulove praised the new group, describing its members as "the cutting edge of technical change and technology transfer in the building industry. By changing building practices through quality construction, these folks and others like them are our best chance to make the model conservation standards work." The model conservation standards are the Council's proposed building standards to improve energy efficiency in the region.

Many of the members of the new organization built homes that met the model standards as part of a demonstration project sponsored by the Bonneville Power Administration. These builders were impressed with the structural quality that thicker walls (to accommodate more insulation) and air-tightening efforts added to the houses. They felt that future demand for these homes justified the builders becoming better informed so they can in turn inform others, Morrison explained.

Noting the members' pride in their work, Council member Trulove added, "they demonstrate that a large segment of the building industry recognizes the value of model conservation standards in providing energy savings, comfort and overall homeowner satisfaction.

The organization meets once a month in Spokane. For more information, write to: Inland Northwest Energy Efficient Building Association, P.O. Box 1942, Spokane, Washington 99210-1942.

— Carol McAllister

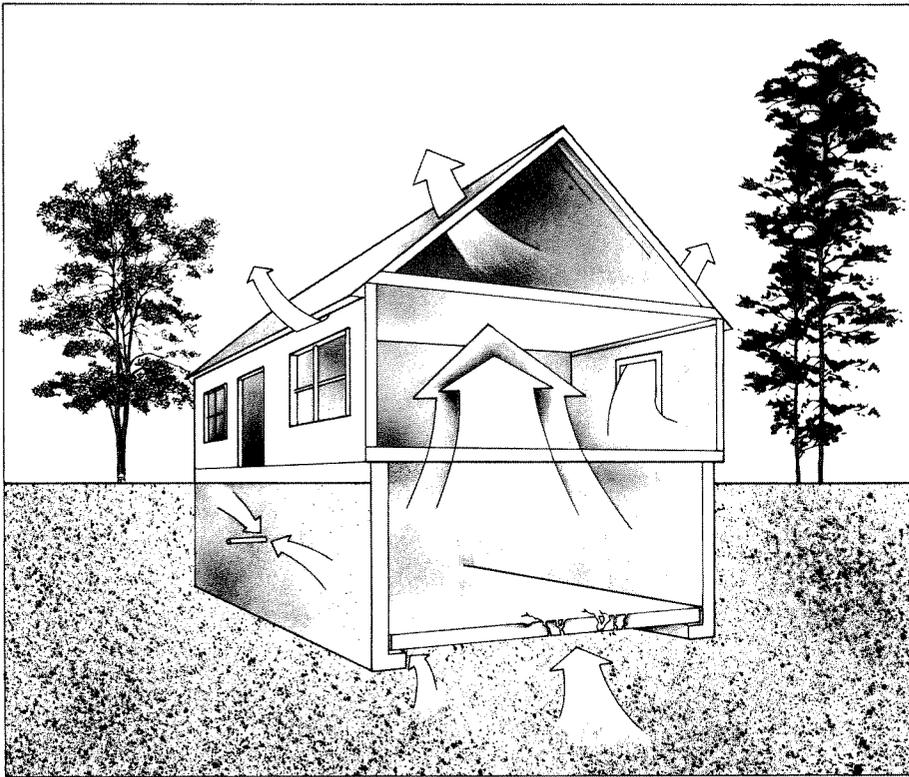
Bonneville's research in the Northwest found an average radon level of 1.20 picocuries in the region's homes. There was no correlation between radon concentrations and the degree of energy efficiency of the homes. Some of the homes with higher radon ratings were weathertight and some were not. But the average radon readings of 46 monitored houses built on or near the Spokane Gravel was 13.3 picocuries per liter. Several houses had levels more than 10 times the EPA guideline, and one house was measured at 179 picocuries.

Such a high percent of potentially risky homes caused Bonneville and other agencies to focus additional research on the Spokane Valley. The Washington State Office of Radiation Protection studied health and death records from the area and, according to Bob Mooney, the head of the office's environmental protection section, they have been "unable to discern any health effects in the Spokane area" from the higher radon levels. In fact, Mooney argues that the EPA is overreacting and exaggerating the health risks from radon.

Nonetheless, Bonneville opted for erring on the "prudent side," according to agency staff person Ruth Love. "There is some health risk [from radon in homes]," explained Love, "but at what point the risk becomes high enough to take action is more difficult to determine."

Consequently, houses in Bonneville's weatherization programs found to have more than 5 picocuries of radon per liter of air

In Sweden there is a national goal of reducing that country's average radon concentrations by half.



Where radon concentrations in the soil are very high, even a slight air leak, particularly in the basement, can afford radon an entry.

are eligible for a partial subsidy to reduce the radon concentrations to below 5 picocuries. To research and demonstrate alternative ways to reduce radon concentrations in homes, Bonneville contracted with the experts at Lawrence Berkeley Laboratory.

Jerry Morrison, of Morrison Construction in Spokane, participated in Bonneville's Residential Standards Demonstration Project, building a house that met the Northwest Power Planning Council's model conservation standards for new construction. When the home was completed, monitoring

for indoor radon began.

In four separate readings, the Morrison home had radon levels that ranged from 3.79 picocuries in a first floor room, to 12.50 in a basement bedroom. The house Morrison built was snug, but where radon concentrations in the soil are very high, as they were under that house, even a slight air leak, particularly in the basement or between crawl spaces and living spaces, can afford radon an entry.

What happens is similar to the normal patterns of heat loss in a home. Soil temperatures around

and beneath houses in the Spokane Valley (and on average throughout the region) stay around 47 degrees Fahrenheit. Inside the house, the temperature is more likely to be about 70 degrees with even higher temperatures near the ceilings. The difference between indoor air and soil temperatures produces a flow of air, possibly carrying radon gas, from the soil up into the house.

The gaseous movement, called the "stack effect," may be accelerated in the winter, reports Spokane-based indoor air quality consultant John Anderson, when the ice cap on the soil everywhere but near the warmer foundations of buildings keeps radon from evaporating out the surface of the soil and forces it instead into basement walls.

Working with Anderson and his partner, Morrison sealed a plumbing hole and other small cracks in the basement floor and adjusted the home's mechanical ventilation system to alter the house's air pressure balance. The Lawrence Berkeley Laboratory is now monitoring the house to determine whether further mitigation is needed.

But studies at the lab have also found that radon levels in homes have very little to do with how airtight the homes are. The presence of radon in homes is really a factor of how "hot" the soil and groundwater around the home are. (Water was not seen as a radon-related problem in the Spokane area.)

"Hot spots," as they are called, would be almost impossible to map, because, while the general geologic structures of a given area can be guessed at, radon tends to accumulate in random pockets. Two similar houses in proximity might still have very different radon readings. The only way to determine radon levels in a given home is to monitor that home. (See box for more information on radon testing.)

When higher than average radon levels were detected in Spokane-area homes, Lawrence Berkeley Laboratory researchers determined several relatively low-cost ways to reduce the concentrations. In some homes, it was as simple as increasing ventilation in

crawl spaces. In other homes, radon concentrations were reduced by sealing cracks in basement walls and floors and using fans to draw air from the upper floors down into the basement. Besides diffusing the radon concentrations, this has the effect of pressurizing the basement to counteract the stack effect and keep the radon from passing into the basement.

Remedial action varied depending on house construction, radon concentrations and mysterious factors that continue to confound efforts to diagnose and cure the radon problem. In general, radon is either blocked from entering houses by sealing leaks and altering relative basement and upper-story air pressures, or it is dispersed by increasing ventilation. But in one Spokane-area house where stopping the air leaks was tried, radon levels went up!

"This is all seat-of-the-pants stuff," says Spokane resident Bruce Siegmund, who worked on the Lawrence Berkeley contract. "Every house is basically a custom job because some techniques work on one house but not on another."

That's one of the reasons why the Spokane research and other radon mitigation work going on in the region is so important. Northwest homebuilders and homeowners are experimenting on their homes, and in the process they are discovering low-cost ways to keep the radon gas deep in the gravel it appears to have come from.

The only way to determine radon levels in a given home is to monitor that home.



Radon and Residents: Responding to the Alarm

In 1984, concerns about radon in household air became a media event, when a Pottstown, Pennsylvania, nuclear power plant engineer triggered radiation alarms as he was going into his plant to work. Bells had gone off routinely several days in a row as the man was leaving the plant. Each night, company officials had kept him at work hours past his shift, to "cool" him off.

More out of curiosity than anything else, the engineer one day decided to test the detectors before he'd been exposed to the plant's radiation. When he tripped the warning again, officials had his home tested for radioactivity and came up with readings almost 20 times higher than is considered safe in uranium mines.

Further testing in the vicinity of the engineer's home outlined an area known as the Reading Prong, a granite ridge dotted with pockets of uranium. Houses built over those uranium pockets had some of the highest radon readings ever found in a home. But houses only 50 yards away had normal readings. Clearly the presence of radon could not be mapped by drawing generalizations from assumed geologic formations.

Radon concentrations seem to be random effects of a number of factors including house construction techniques (well-sealed houses can reduce the air pressure changes that can draw radon from the soil into houses); underground pockets of radium or uranium — both sources of radon gas; and building materials (some concrete and some types of stone contain higher radon concentrations).

The only sure way to determine radon levels in a home is to measure the radon over a period of time. Radon monitoring devices are commercially available. Typically, the monitor and gas analysis required to interpret the results cost about \$20 per monitor. As radon decays it gives off tiny alpha particles that leave "tracks" inside the small unobtrusive plastic radon monitor. The Bonneville Power Administration maintains a list of suppliers who carry these "alpha tracking" monitors. Call the Bonneville Public Involvement Office, 800-547-6048 in Idaho, Montana and Washington; 800-452-8429 in Oregon outside Portland; and in Portland 503-230-3478, for more information.

Regional and local offices of the U.S. Environmental Protection Agency also provide information on radon. The Pacific Northwest regional office, which covers Idaho, Oregon and Washington, is at 1200 Sixth Avenue, Seattle, Washington 98101, 206-442-7660. Montana's regional office is in Colorado at the Region 8 office, Suite 1300, One Denver Place, 999 18th Street, Denver, Colorado 80202, 303-293-1648.

Builders seeking guidance on radon proofing dwellings can call the National Association of Homebuilders Research Foundation's information clearinghouse on radon at 301-249-4000.

The Northwest Power Planning Council distributes a publication that describes radon mitigation construction techniques for both new and existing housing. Known as the "yellow code book," it is a technical appendix to a set of documents that translate the Council's model conservation standards into equivalent building code language. (The series is fondly referred to as the "code of many colors" because of its blue, orange, purple and yellow volumes.)

— CC

TIM WAPATO

Tim Wapato has been in one kind of law enforcement or another for much of his life. He spent 21 years with the Los Angeles Police Department, working a variety of assignments—vice, detectives, and affirmative action—and retiring as a lieutenant. That so-called “retirement” was to take a job with the Columbia River Inter-Tribal Fish Commission in 1979. Now, Wapato is enforcing Indian fishing rights reserved by the tribes through treaties with the U.S. government signed more than a century ago.

The Commission, of which Wapato has been director since 1982, is made up of four Columbia River tribes: the Yakima in Washington, the Warm Springs and Umatilla in Oregon, and the Nez Perce in Idaho. The Com-

mission came into being because of the tribes’ need for technical, biological and policy assistance in their common interest area—Columbia River fish.

Since its creation just 10 years ago, the Inter-Tribal Fish Commission has become a major voice in Pacific Northwest fish and wildlife matters, thanks in large part to its executive director, Wapato. He is a familiar figure, not just to Northwest Indian tribes, but to the region’s entire fisheries community. Wapato was one of the key people who helped put together the United States-Canada Pacific Salmon Treaty, a long-sought agreement on salmon allocation and conservation for the two countries’ intercepting fisheries.

His contribution was so successful that President Reagan and 24 Northwest Indian tribes chose him as their representative to the United States’ four-member panel on the U.S.-Canada Pacific Salmon Commission. This commission was set up to implement the treaty, and Canada also has four commissioners. Wapato is chairman of the U.S. section.

It’s a long journey from the streets of Los Angeles to the streams of the Northwest, but Wapato—an enrolled member of the Colville Confederated Tribes in north-central Washington—started out in the Northwest. He grew up in the Methow Valley, went to college in the area and worked summers as a smoke jumper.

After serving two years in the military, Wapato married and moved to Los Angeles. “I figured if I was going to be out of work, I might as well be warm,” he said.

“I was going around to various places and putting in applications, and I kept seeing this ad that said ‘Los Angeles needs police officers.’ They were paying \$440 a month, and that was a fortune to me.” Finally, Wapato applied for the police department, figuring he had little chance of a job since it was a recession year and police departments historically get lots of applicants when times are bad. He took the qualifying test anyway.

¹This includes the four Columbia Basin tribes which make up the Commission as well as 20 tribes in western Washington.



Those days were pre-affirmative action, so Wapato's minority status wasn't any help. As it was, he didn't need help. Out of 2,700 applicants, he had the second highest score. It turned out to be a career of which he said, "I never had a dull moment. In fact, I'm one of those fortunate people who have never had a job that I hated going to work. I still have a job where I don't hate going to work."

Wapato hadn't been looking for his next job. But the Commission had been looking for someone like him to put together its Columbia River fishing season enforcement program. "I got a call from the then acting director of the Commission, Nick Baran. Somebody

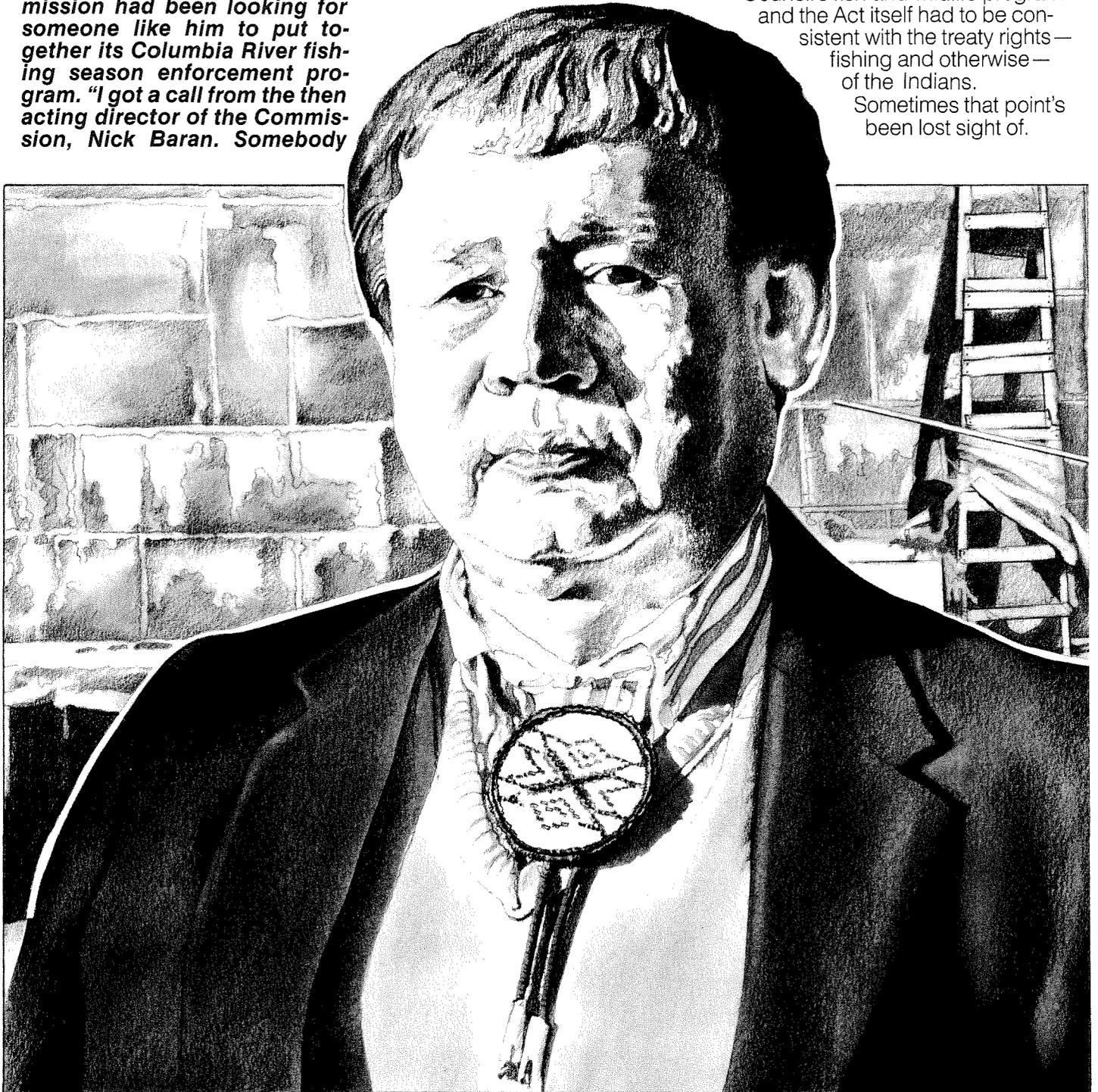
had told him 'there is an Indian down there who's a lieutenant, but we don't know his name.'"

Finding that name wasn't as hard as it could have been on a 7,000-member police force. There were only eight Indians on the force. That contact led to a phone call, an interview and — rapidly — the job with the Commission.

Q. You were at the Northwest Power Planning Council meeting when Bob Duncan assumed the Council chairmanship. At that meeting, he said to you — and others — that he wants to hear from you. If you were sitting down with him now, what are the things you'd tell him?

As we were putting the [Northwest Power] Act together, we put a very strong emphasis on the fact that the measures within the Council's fish and wildlife program and the Act itself had to be consistent with the treaty rights — fishing and otherwise — of the Indians.

Sometimes that point's been lost sight of.



Early on, we educated the Council members and the staff—through testimony, comments and recommendations—about the treaty fishing right. The treaties say that we reserved “the right to take fish at all usual and accustomed fishing places.” What this means is that we reserved the fish as they were in the Columbia River Basin during pre-treaty times. The right is that there be fish and fishing at the customary places.

As we move forward, this seems to have been forgotten, and people are now talking openly about moving Indian fisheries to various places, such as into the tributaries or having more restrictive harvest regimes. To me, that shows there’s a lack of understanding, or a lack of recognition,

of the treaty fishing right.

We certainly are going to provide the opportunity for continued education to the Council members and the staff as we go forward in implementation of the Act. We need to impress on the Council that, although there are very many positive measures included within the program, we still think there’s much to be done.

We consider the water budget² the flagship of that program, but the way it’s been implemented doesn’t fulfill the promise of what we thought the water budget would do to provide protection to those outmigrant smolts. We’re certainly not protecting anywhere near the percentage we thought we would be able to. So, although we’re still very supportive of the

water budget, we need to have some changes in the way it’s being implemented. We’ve put forth some amendments to that and will continue to do so until we feel that it’s being implemented in an adequate fashion.

We also need to impress on the Council and the general public that the biggest harvester of those fish is still the dams. We’ve cranked in restrictions on all the ocean fisheries from Alaska through Oregon. We’ve cranked in restrictions on tribal fisheries. We’ve cranked in restrictions on other inriver fisheries to protect weak stocks. But the biggest harvester remains the dams. I guess we’re at a stage now where we’ve said, “Hey guys, we’ve put up, now it’s your turn to put up with some controls on the dams’ harvest.”

We are among the biggest advocates and supporters of the Power Planning Council and the fish and wildlife program, and we will continue to be strong supporters of the promise within the Council and that program. We certainly intend to work constructively with the Council as we address the problems that remain. We don’t want to be perceived by the Council as being in an adversarial position, because we believe that the tribes and many of the people still working with the tribes are, in fact, authors of the Act and of the provisions within the Act that later became a fish and wildlife program. So we’re going to continue to be strong supporters and hopefully work together.

We’ve cranked in restrictions on inriver fisheries to protect weak stocks. But the biggest harvester remains the dams.

²The water budget is a block of water set aside to aid juvenile salmon and steelhead migrating to the sea during the spring. This water is released to flush the fish through the Columbia system in approximately the same time that it took before the river was dammed.



Q. You called the water budget the flagship of the fish and wildlife program, but said there are problems with implementation. What are the key problems?

Well, first of all, we're not getting the water budget out of the Snake River system. Probably because of the physical capacity to store water in the Snake, we may not be able to get what the water budget calls for out of that system. If that's the case, then we have to do something different.

We have provided some alternatives for using the water that is available. If the water and spill situation in the Snake will always be a problem, which we're led to believe it might be, then we should be moving forward with all possible speed on the installation of bypass screening and those things that can be done at the Snake River hydroelectric projects.

But all the mechanical bypass installations are being put on hold by the Corps [of Engineers]. So, we feel very strongly that the Power Council, in conjunction with the interested parties, has to take immediate steps. We think a very strong coalition of power interests, tribes, state agencies, and perhaps even Bonneville's James Jura, can put forth a very positive solution and seek the necessary funding authorization from Congress to go forward.

Q. You figured prominently in the U.S.-Canada Pacific Salmon Treaty signed into law in April 1985. This was a major breakthrough in the management of the two countries' intercepting salmon fisheries. How did the tribes come to play such a major role?

The intercepting fisheries of both countries have been a problem for years — 40 or 50 years. This particular session of trying to negotiate a treaty had been going on for about 20 years before the treaty was obtained between the two countries. The tribes began sending people to those negotiations in the mid-'70s, first as observers to see what the discussions were and how they might affect their stocks.

At that time there was the belief that the stocks were being harvested by Alaska [fishers], but we didn't have the solid data that is available now through tagging and other methods. Then, between 1978 and '80, the tribes began taking a more active role in those negotiations.

Meanwhile, since the tribes were unable to get limits on the Alaskan harvest of Columbia River chinook through the normal regulatory channels, the tribes found it necessary to file a lawsuit.

Then, during the U.S.-Canada process, the tribes began asserting themselves as members of the U.S. delegation. The presentation of tribal viewpoints was expanded and clarified through acquisition of technical and analytical staff. We had key members on the U.S. technical teams. Their expertise and knowledge came to be relied upon as U.S. positions.

My role within that process came about in 1982, when I became director of the Columbia River Inter-Tribal Fish Commission and as such was responsible for helping coalesce the Columbia River tribes' position and in making that position known. Because of tribal policy direction and because of our technical expertise, we gradually achieved a role of some leadership within not only the Indian section of the team, but also on the U.S. team as a whole.

We were able to forge an extremely strong communication capability with Bill Wilkerson and Jack Donaldson [at the time, the respective directors of the Washington Department of Fisheries and the Oregon Department of Fish and Wildlife]. Together, we would find alternative options that would work and that we could take back to get support from our various tribes and constituencies. The trust that developed through having to deal with each other daily on a number of issues gradually culminated in my present role within the U.S.-Canada Pacific Salmon Treaty Commission.

Q. What do you believe the tribes' biggest achievements for the tribes have been in the recent past?

All the treaties for the Northwest "fishing tribes" were signed in 1854-55. They basically all had the same type of language — fishing in common and reserving the right to the fish at the accustomed places. There's been a whole series of court cases starting back in the 1800s to the present time, where that right was being restricted.

The courts have been gradually interpreting and defining the right that's within the treaties. That culminated in two cases. One was the U.S. v. Oregon³ or "Belloni" decision in 1969. The Columbia River tribes were being restricted by regulations the states of Washington and Oregon were putting forth that, in effect, disenfranchised the tribes and allowed for a harvest of all the fish before they got to the tribes' areas.

The tribes went to court and won the case. Judge Belloni first enunciated the concept of the tribal right to up to 50 percent of the fish. Even having won that case, the tribes on the Columbia River still were in court each year for the next six years trying to get the tribal fishing season. The Columbia River Compact⁴ was still taking actions that didn't allow the Indian treaty fishery to come forward.

³U.S. v. Oregon is a court case in which the Columbia River tribes' treaty rights to harvest approximately half of the river's fish were established. The case is ongoing as implementation is being resolved.

⁴The Columbia River Compact is an interstate compact between Oregon and Washington which sets commercial fishing seasons in their mutual waters. Idaho and the tribes are not represented in the Compact.



On somewhat of a similar time path was the "Boldt" case or U.S. v. Washington, decided by Judge Boldt in 1974. That decision said that not only did the tribes have a right to the fish, but they had the right to the co-management of that fishery resource. That case was later appealed, and in 1979, the Supreme Court basically affirmed the Boldt decision.

Co-management became a fact of law, but not a fact in practice. So from 1974 to the present time, through a series of skirmishes in court between the states and the tribes, treaty rights were further defined as the tribes continued to win cases.

Finally, there was a recognition by key managers that the way to settle this should not be adversarial. A better way would be to sit down and work out the management cooperatively. Wilkerson and Donaldson both deserve much more credit than they received for that process. They both took a tremendous amount of political heat. Tribal leaders, of course, also took and are still taking political heat — often threatening their leadership positions within tribal government — in trying to move from confrontation to working out co-equal, co-management arrangements within the states.

But I think the biggest steps have been that there are in fact arrangements and agreements in place, including the U.S.-Canada treaty, the ocean and inriver harvest agreements and now, hopefully, the U.S. v. Oregon agreement. These are beginning to fulfill the promise of the treaties rather than just having a right that's been somewhat of an empty right through much of the last 40 years. Non-Indians are finding they're getting more fish, too, now that we've started working together.

Non-Indians are finding they're getting more fish, too, now that we've started working together.

Q. How does the Council and its fish and wildlife program factor into this?

From our perspective, the Council is designed to be the vehicle to systematically approach problems that have to be dealt with in order to "protect, mitigate and enhance" anadromous resources in the Columbia River. There have been a number of different activities in the past that have tried to deal with management problems caused by the hydroelectric system. But they have basically failed, or at least underachieved, because they have been piecemeal in nature.

The Columbia River Inter-Tribal Fish Commission believes and will strongly advocate that the Council's fish and wildlife program is the vehicle that has to systematically deal with all those ills. As such we have been, and probably will continue to be, the Council's strongest advocate in those terms. As the Council members may have noticed in the past, we will be continually urging them to take a strong stance in implementing that program.

We think the Council has to continually remind itself that it does have two mandates from Congress — to "protect, mitigate and enhance" the fisheries along with the power responsibilities. It's not a trade-off situation, but it's one where the responsibilities are co-equal, and we hope the Council treats them that way.

Q. What areas do you think are the most critical in the Council's fish and wildlife program? Where has the program been most successful?

The water budget is a positive step, but it's not being implemented. The Yakima [River in central Washington] system is extremely positive. We have some very massive capital outlays in the Yakima system, in screening of irrigation systems and laddering of various dams and correcting other bypass problems. That's another showcase part of the program. The run size of spring chinook in that system has increased from about 900 in 1981

to 9,000 this year. That's very exciting. There's work moving forward on the Umatilla [River in eastern Oregon] system. It's not all off the ground yet, but it's very positive.

Q. Where should the key effort come — what areas?

The key effort is still with the dams, those blocks of cement in the rivers. As I've said, the dams are still the biggest harvester of fish. We have restricted everybody else in the world on harvesting fish, and it's time now to start seriously addressing the passage problems at the hydroelectric projects. That has to be a major emphasis.

Another area of major emphasis should be to start producing fish upriver. The first step of that would be the subbasin planning process. That has to go forward immediately. It has to be funded adequately. We advocate that process be done by the agencies and tribes and funded by Bonneville [Power Administration] through the Council. That's the first step in determining where and what types of production have to occur to achieve the Council's hoped-for interim goal of doubling the run size. Notice I say "interim" goal.

Q. Do you feel the interim goal of doubling run sizes is reasonable?

Yes, but we certainly hope we'll also determine that other measures can be done. We hope that the program is flexible enough to go ahead and do more. Down the road, we don't want somebody to seize on doubling and say, "Gee, we've done that; we're finished." Doubling the run does not approach compensating for the annual losses that this hydroelectric system causes.

Q. The cost of the fish and wildlife program has been brought up as an issue. In particular, certain utilities have questioned costs. How would you respond?

They [the utilities] are bearing a burden because of the program, and rightly so. It's the cost of doing business. The fish and wildlife

program is designed to start restoring those fisheries that have been basically neglected for 50 years. Although there were some measures taken in the Mitchell Act and others, the losses have not been dealt with systematically.

The Act was meant to, and Congress intended, that there would be a cost to the power interests to restore those fisheries. The Council should communicate that to the ratepayers and to the power interests in the area.

If the Power Act had been in place at the time the dams were built, fish and wildlife costs would have been incorporated as a cost of doing business. If you're going to kill off 11 million fish a year, you have to take certain measures to replace those fish. Had that been in place as we were going forward from day one with the dams, costs might be looked at differently. I think people are now saying "Gee, this is unfair that we have to compensate and mitigate for loss of the fish." But that is exactly what the Act was intended to do.

Q. Cases such as the "Sohappy" or so-called "salmon scam" incidents get a lot of publicity. But what about the other side of the issue, the tribes' own efforts to curb poaching and to police the resource?

The harvest regulations, of course, are now controlled coastwide through a number of processes. The Pacific Salmon Commission puts ceilings on harvest in the ocean which protects Columbia River stocks. We now negotiate ocean and inriver agreements before the fishing season starts for both Indian and non-Indian ocean and inriver fisheries. We have tribal regulations that control the harvest by treaty Indian fisheries.

The so-called "salmon scam" case, the Sohappy case, was developed by the National Marine Fisheries Service enforcement section in 1981-82. Those were years when the run sizes and status of salmon stocks were very much depressed. Those cases have been prosecuted in various courts, resulting in some convictions. Many of these were

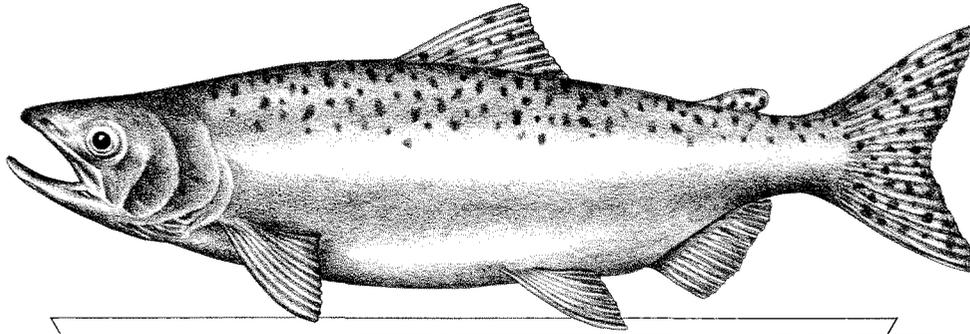
appealed, so that the execution of the sentences just occurred in late 1986. I think this leads people to believe this might be a recent case or a problem that's ongoing. The fact of the matter is, it's a single incident and a single case that really occurred in 1981-82.

In 1982, the four tribes that make up the Columbia River Inter-Tribal Fish Commission, instituted an enforcement section to complement existing tribal enforcement programs. We now have eight officers headquartered at Hood River that control the Indian

fishery. In addition, there are patrols in those areas by Oregon State Police, Washington Department of Fisheries, Washington Department of Game, National Marine Fisheries Service and U.S. Fish and Wildlife Service.

At almost any time of day or night there's an officer from some agency patrolling the shores on either the highways or in boats on the river. We have highways running up both sides of the river. It's probably the most patrolled, most enforced, most regulated fishery on the West Coast.





COLUMBIA

RIVER

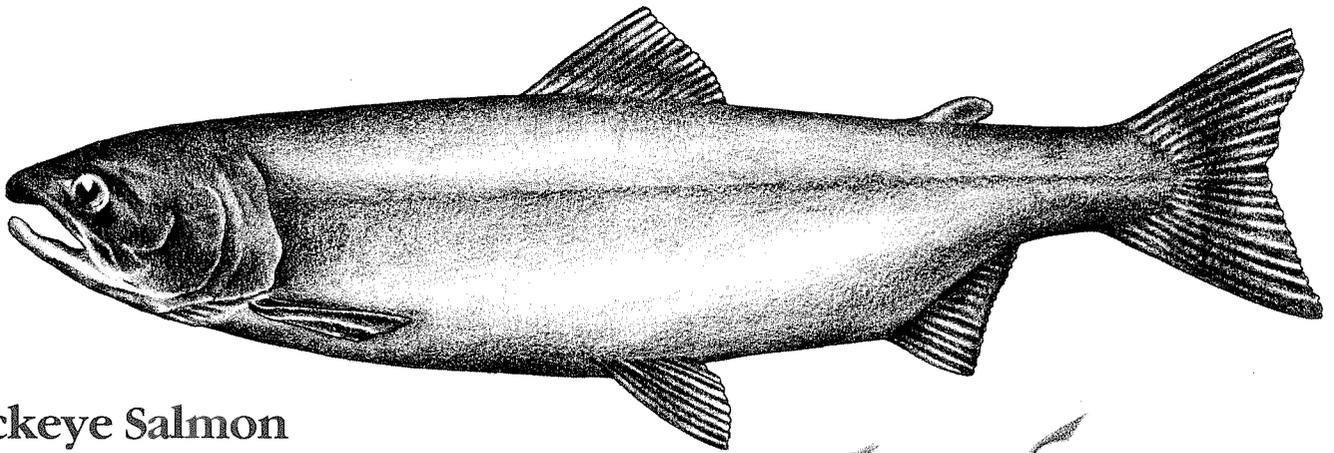
SALMON

SPECIES

By Ruth L. Curtis

Along the rim of the Pacific Ocean from Asia to North America, live six species of salmon belonging to the genus *Oncorhynchus* (meaning hooked snout). The five described on these pages are native to the Columbia River Basin, but have been given Russian names because Russian naturalists were the first to study the fish in the Far East. A sixth species, the cherry salmon (*Oncorhynchus masu*), is found only in Japan, Korea and the Soviet Union.

The Columbia River system also produces more steelhead — an ocean-migrating rainbow trout — than any other river system in the world. Steelhead trout are actually more closely related to the Atlantic salmon than to the Pacific salmon.



Sockeye Salmon
(*Oncorhynchus nerka*)

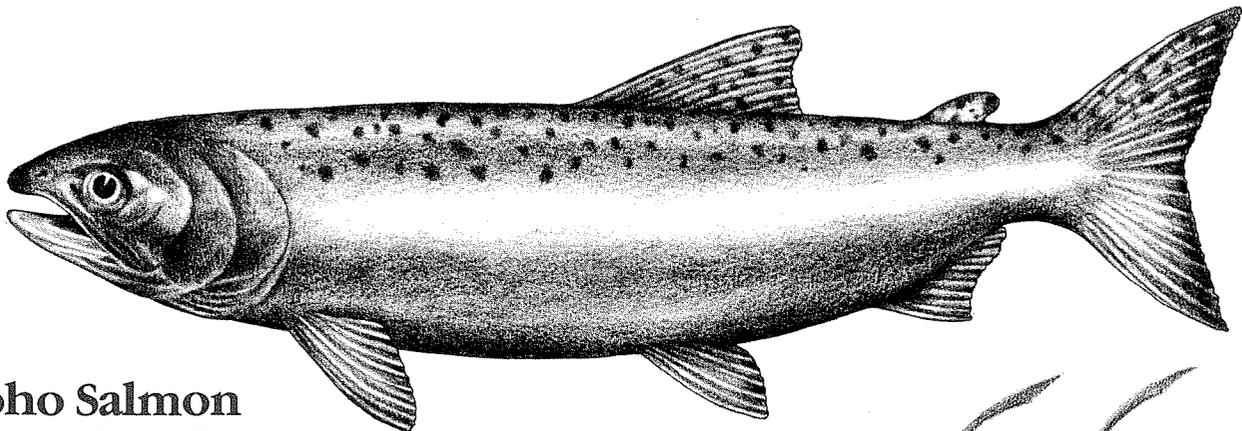
(Known as red in Alaska or blueback in the Columbia Basin)

Sockeye, the most common salmon in the Pacific, spawn in streams that have lakes in their watershed. Historically there were eight lake systems in the Columbia River Basin inhabited by sockeye. Today only Lake Wenatchee in Washington and Osoyoos Lake in British Columbia produce any significant numbers, although a remnant run is still produced in Idaho's Redfish Lake. Landlocked forms of sockeye salmon, called kokanee, kickaninny or little redfish, are found in some lakes and many reservoirs in the Columbia Basin.

After hatching, the young sockeye spend from one to three years in the lake before migrating to the ocean. Then, between their first and fourth year at sea, the adults, weighing an average of 3 to 5 pounds, return to the Northwest streams from July through October to spawn and produce their next generation.

The Columbia River sockeye run in 1986 was much smaller than the previous year's. Fisheries specialists have observed that the sizes of these runs historically tend to be cyclical for unknown reasons, so last year's decrease does not alarm them.

Sockeye



Coho Salmon
(*Oncorhynchus kisutch*)

(Also known as silvers, or silversides)

Coho were originally found in many North American streams from the Bering Strait to the Sacramento River. They rarely travel far inland, preferring, in the Columbia system, to spawn in the lower river tributaries below Bonneville Dam.

However, in the past, some have migrated as far as the Spokane River — about 1,126 miles from the ocean. The young fish spend one year in the nursery stream, then typically two years in the ocean before returning from early October through late December to the nursery stream. Coho at maturity weigh about 7 to 9 pounds.

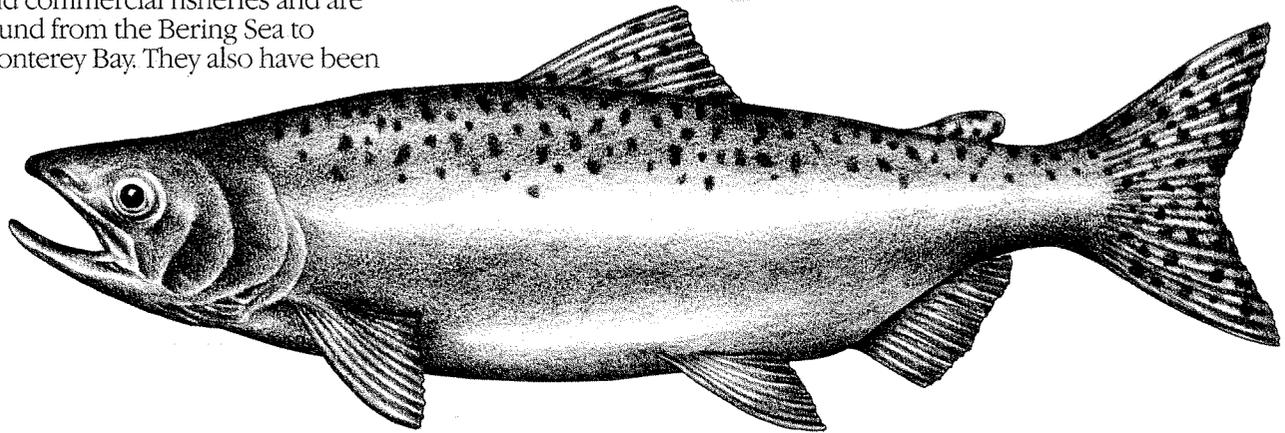
Coho

Chinook Salmon

(Oncorhynchus tshawytscha)

(Also known as king, blackmouth, tye or Sacramento salmon)

Chinook are the most important salmon species for West Coast sport and commercial fisheries and are found from the Bering Sea to Monterey Bay. They also have been



successfully introduced in the Great Lakes and in New Zealand.

Chinook reach maturity when they are between 3 and 7 years old — living the longest of the Pacific salmon. They are also the largest of the salmon, with recorded weights over 100 pounds.

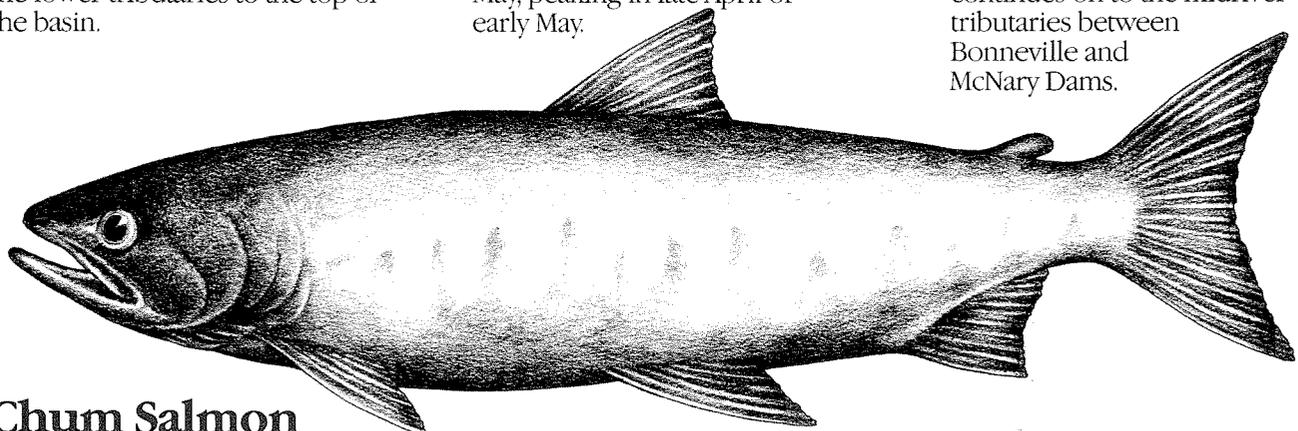
In the Columbia River system, most chinook return to spawn in the spring or fall, but some can be found in the river almost any month of the year. Before dams blocked off the upper Columbia, chinook spawning grounds extended from the lower tributaries to the top of the basin.

The three major divisions in the chinook species are based on the season of their adult migration to the spawning streams; spring, summer and fall. Each division also has two segments based on where they spawn.

The fish of the lower river spring run migrate upriver from January to May, with the peak in late March or early April, and head for the river's tributaries below Bonneville Dam. The upper river spring run journeys to the Snake and upper Columbia tributaries in late March through May, peaking in late April or early May.

Adult summer chinook return to the river system in June through August. One segment heads for the Salmon River drainage in Idaho and the other for tributaries of the Columbia above the confluence with the Snake River. These fish probably were the bulk of the lower river commercial catch in the late 1800s.

From August through December, one segment of the fall chinook run, called tules, goes to the lower river below Bonneville Dam (in early August through December) and the other, the upriver brights, continues on to the midriver tributaries between Bonneville and McNary Dams.



Chum Salmon

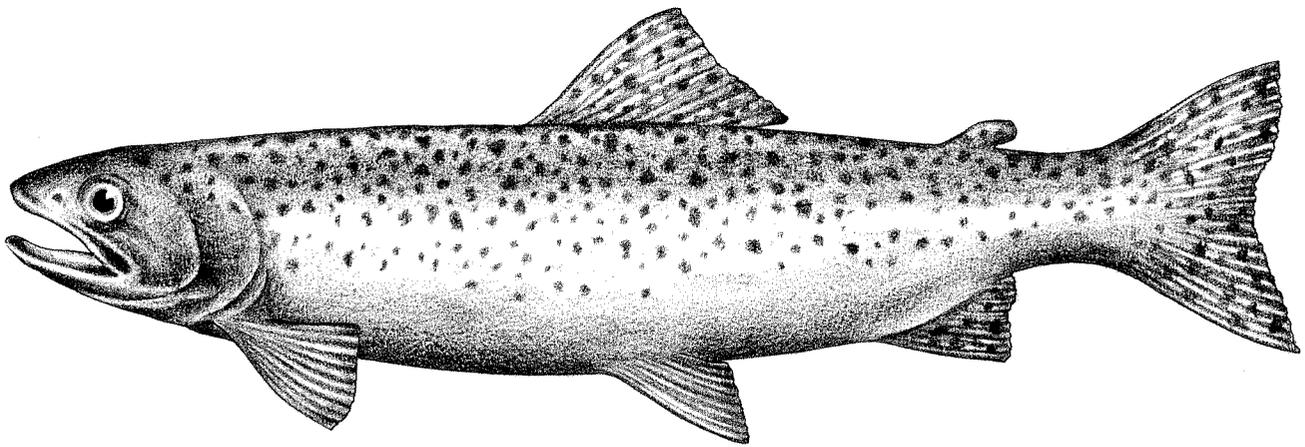
(Oncorhynchus keta)

(Also known as dog salmon)

Chum are the second most abundant species along the whole Pacific Rim, although relatively few are found in the Columbia River Basin. Those few enter the Columbia River in mid-October and November

heading for the lower tributaries primarily in Washington. Young chum start for the sea almost as soon as they hatch. Formerly quite abundant in the Columbia Basin, they have declined drastically in num-

bers this century because of habitat degradation.



Steelhead Trout (*Salmo gairdneri*)

Close relatives of Atlantic salmon, steelhead are actually rainbow trout that migrate to the ocean. Like the Atlantic salmon, they do not always die immediately after spawning — some have been known to spawn three times. (In contrast, Pacific salmon spawn only once before dying.)

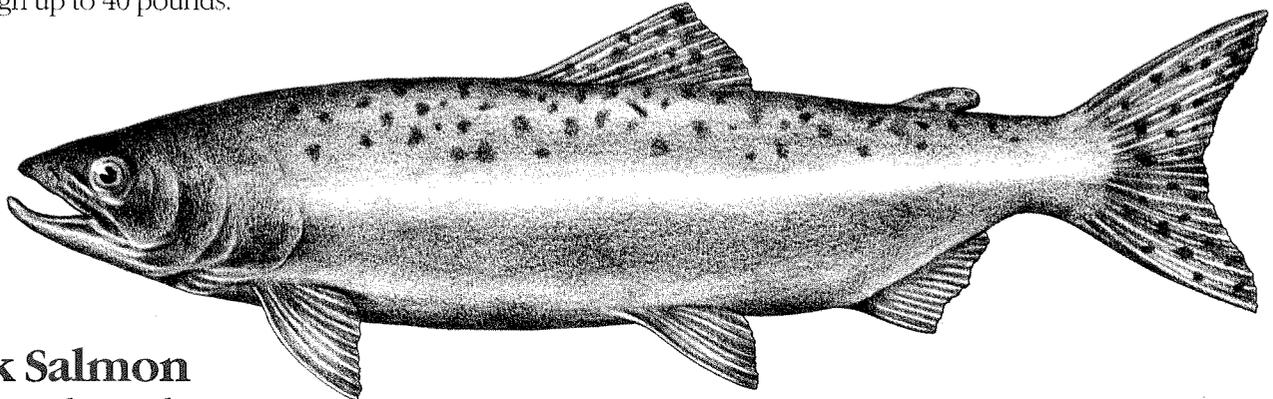
After hatching, juvenile steelhead stay in the stream for one to two years. The adults will return to that stream to spawn in their third, fourth or fifth year. At maturity they can weigh up to 40 pounds.

Steelhead

Winter steelhead migrate in November through June heading to the lower Columbia tributaries to spawn. Summer steelhead migrate from June to October. This migration is divided into two segments: group A — smaller fish returning to the mid- and upper Columbia and

SNAKE RIVER TRIBUTARIES and group B — the larger, later fish which spawn primarily in the Clearwater River drainage in Idaho.

Steelhead are rarely caught in the ocean, but are an important sport fish in Idaho, Oregon and Washington.



Pink Salmon (*Oncorhynchus gorbuscha*)

(Known as *bumpy* for the humpback on the adult male)

Only a few pink salmon are found in the Columbia River — the southernmost extent of their range. Most are native to Alaska, British Colum-

bia and Puget Sound. Pinks are the smallest of the Pacific salmon, weighing only about 4½ pounds.

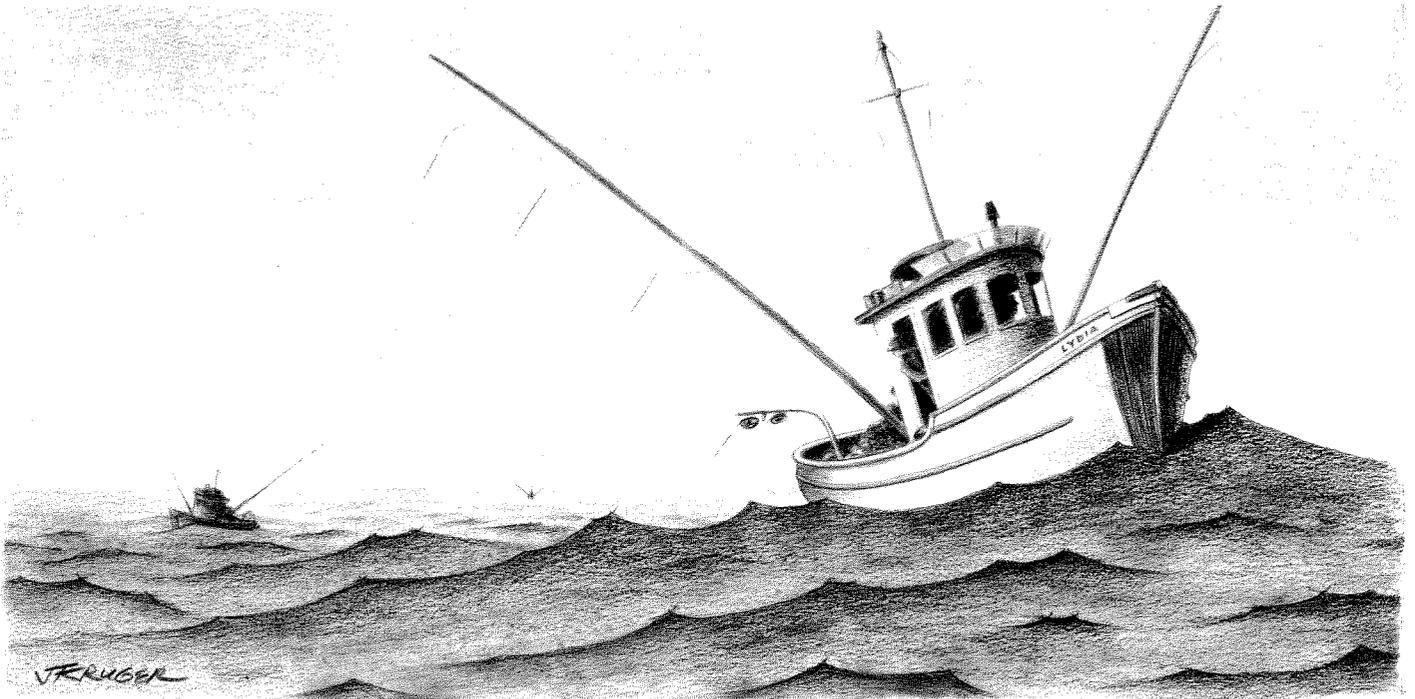
Pink

Suggested reading for more information:

Childerhose, R. J. and Marj Trim, 1981. *Pacific Salmon*. Seattle, Washington: University of Washington Press.

Netboy, Anthony, 1980. *The Columbia River Salmon and Steelhead Trout: Their Fight for Survival*. Seattle, Washington: University of Washington Press.

REGULATING the RETURNS



by Carlotta Collette

Good news is hard to come by in the Pacific salmon fishery. From some perspectives, there have been about a hundred years of bad news since the Columbia River salmon and steelhead harvest peaked in 1883. But last year's upriver fall chinook and steelhead runs were among the best since the first dams were completed in the 1930s, and the whole region has perked up over the promise of even better returns in the future.

To what does the Northwest owe this rekindling of abundance? Many factors worked simultaneously to nurture the salmon and steelhead. In the upper basin a few years ago, several hatcheries began increasing production of fall chinook. This season's returns probably include some of those fish.

The weather has also helped. A string of good runoff years within the basin helped push juvenile salmon and steelhead quickly out to sea. In the ocean, their feeding grounds have been able to recover from the devastating effects of the sea-warming phenomenon called "El Niño," which killed off large numbers of

the shrimp and other sea life salmon and steelhead feed on.

But many people are saying that the improved runs are the result of the increasing cooperation among tribal and non-tribal fisheries managers in the Columbia River Basin, Alaska and Canada. They point specifically to the 1985 signing of the long-negotiated treaty between the United States and Canada; the treaty that governs the taking of Columbia River stocks of salmon and steelhead along the route of their adult migration up the Northwest coast into Canadian and Alaskan waters.

What the U.S.-Canada Pacific Salmon Treaty accomplished, after nearly 20 years of debate, is a plan to allocate harvests of Columbia River stocks of steelhead and salmon, primarily the upriver fall chinook, as well as stocks from other Northwest rivers. The treaty has two primary goals: to encourage fish production while discouraging overfishing; and to balance each country's harvestable returns against that country's investment in restoring the fishery.

While the treaty is not the only action designed to rebuild failing fish runs on the Columbia, it was an important missing piece in what is called "gravel to gravel" management of the resource. Efforts such as the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program are working to improve fish survival within the basin from their spawning gravel through the freshwater migratory route.

But within the fish and wildlife program, the Council expressed concern that a basinwide protection effort and major ratepayer investments in improving Columbia River fish runs could be lost in the ocean, where Alaskan and Canadian fishers were hauling in approximately 45 percent of some runs.

So, while fall chinook runs on the Columbia were sinking to record lows, and fishing seasons within the basin were all but eliminated, the Alaskans and Canadians were folding these stocks into their excellent harvests. Less than 20 percent of the total runs of salmon and steelhead ever made it back to the basin.

This emphasis on an ocean-based fishery for Columbia River stocks is a reversal of historical fishing patterns. Commercial harvesters of Columbia River salmon and steelhead only moved out to sea in about 1912, nearly a half-century after the industry was thriving within the basin. In the heyday of the inriver salmon fishery, a year's average commercial salmon catch totaled 30 to 40 million pounds. Every imaginable means of taking fish from water was tried on the Columbia. There were few restrictions on "tackle" or seasons, and the laws that existed were rarely enforced.

The first legislation designed to curb the catch was introduced in 1866, when it became unlawful to build a fish trap that would span more than two-thirds of, or altogether block, fish passage on the Walla Walla River in Washington. Further legislation prohibited certain fishing devices, such as the enormously successful fish wheels, and regulated harvest periods in an effort to permit enough fish to return to spawning grounds to replenish the runs. Nonetheless, the number of cannery operations and the number of fish caught in the commercial fishery both peaked in 1883 with 39 canneries and about 42 million pounds of fish.

Regulating the fishing industry has been difficult in part because of the migratory nature of the fish. The Columbia River itself is shared by two states, and the basin as a whole spreads into parts of seven states and Canada. When Washington and Oregon set different fishing seasons, enforcing either state's limits was extremely complicated.

One of the most important early pieces of management legislation was the Columbia River Compact of 1918, which provided for seasonal coordination of the commercial fisheries between Oregon and Washington. But when the bulk of the commercial harvesters moved out to the ocean feeding grounds and up into Canadian and Alaskan waters seeking bigger fish and less regulation, the problems of defining fishing seasons and allocating fish among the states, Indian tribes and two nations became more complex.

In 1976, the Fishery Conservation and Management Act (often referred to as the Magnuson Act after Senator Warren Magnuson, of Washington) was passed to give the federal government the responsibility for regulating the ocean fishery within 200 miles of the U.S. coastline. (The first three miles of coastal waters are still regulated by the adjacent states.) Through the Magnuson Act, the Pacific Fisheries Management Council was formed to manage harvests off California, Oregon and Washington. The Alaskan waters are controlled by the North Pacific Fisheries Management Council.

These two councils were effective in reducing fishing seasons by almost half what they were before the Magnuson Act was passed, but they were less able to relieve the harvest pressure on depressed upper Columbia River stocks, which were harvested in large part off British Columbia and Alaska.

In the early years of the U.S.-Canada Pacific Salmon Treaty negotiations, the primary focus was on protecting Canada's Fraser River runs. The fall run of upriver Columbia chinook was added to the treaty

talks in 1982. Now, the Pacific Salmon Treaty calls for reducing Alaskan and Canadian catches. The treaty set specific limits on the number of Columbia River salmon and steelhead that could be caught by U.S. and Canadian fishers in 1985 and 1986. The record returns of upriver bright fall chinook in both 1985 and 1986 point to the success of these restrictions.

However, the returning salmon and steelhead, while vigorous in number, still must run the gauntlet of hydropower dams as they climb the river to their spawning grounds. Limiting the ocean harvest of these fish is only one piece of the larger agenda of protecting the fish along their complete migratory path.

As Jack Donaldson, executive secretary of the newly restructured Columbia Basin Fish and Wildlife Authority explains, "We have two kinds of harvesters on the Columbia — direct harvesters, such as the commercial, recreational, treaty and non-treaty [referring to historic Indian treaties that assured the tribes' rights to salmon and steelhead], and non-direct harvesters. The non-direct harvesters include the hydropower system, irrigators and others." Donaldson argues that the Pacific Salmon Treaty offers reassuring controls on the direct harvest, "but we don't have controls on the non-direct mortality, yet," he stresses.

If the work to make salmon and steelhead safe within the basin is as successful as the effort to limit their harvest at sea, two years of good news could possibly become a trend.

Summer chinook
31,041

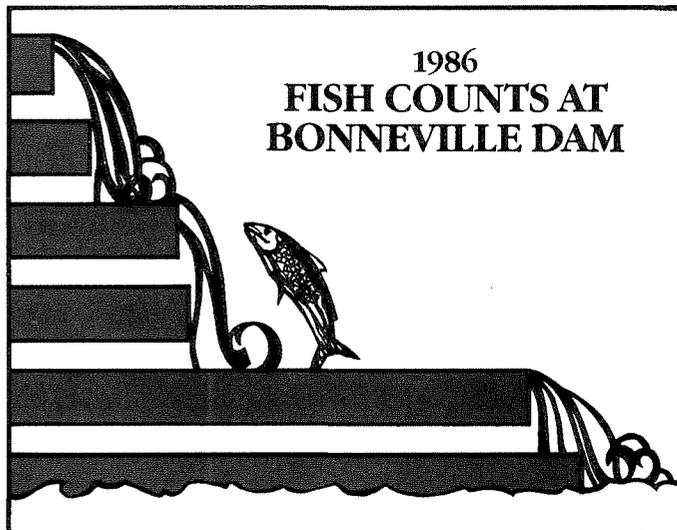
Sockeye
58,099

Spring chinook
123,177

Coho
130,835

Steelhead
379,429

Fall chinook
416,802



previous high count & year
(since counting started in 1938)
31,065 in 1980

165,107 in 1985

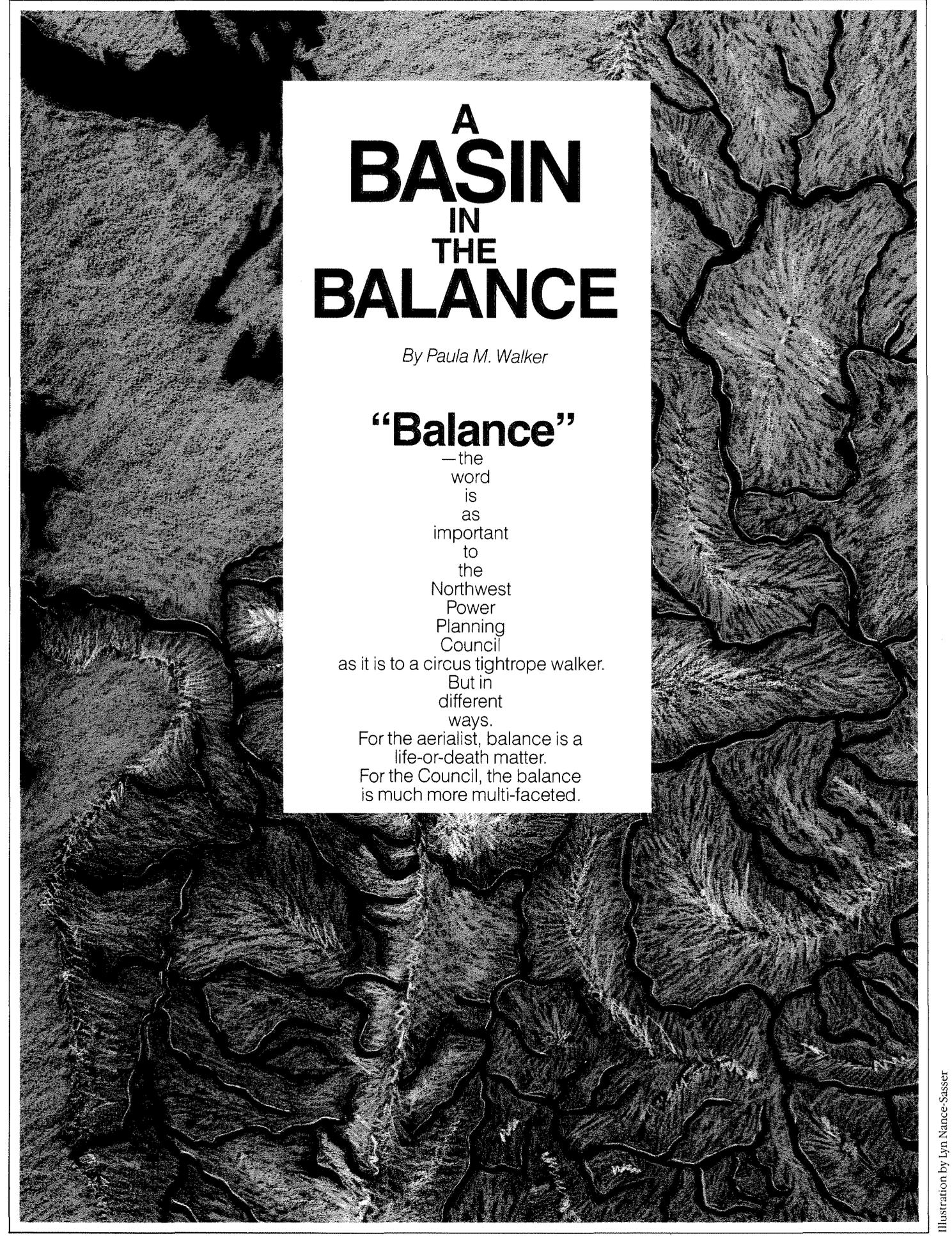
149,863 in 1978

none higher

none higher

none higher

Source: the U.S. Army Corps of Engineers



A BASIN IN THE BALANCE

By Paula M. Walker

“Balance”

—the
word
is
as
important
to
the
Northwest
Power
Planning
Council
as it is to a circus tightrope walker.
But in
different
ways.

For the aerialist, balance is a
life-or-death matter.
For the Council, the balance
is much more multi-faceted.

The Council's congressional mandate carries two distinct charges: to develop a power plan to meet the electric power needs of the Pacific Northwest for the next 20 years and to develop a program to protect and enhance the fish and wildlife resources that have been affected by hydroelectric development in the Columbia River Basin. The Council's challenge is to exert an evenhanded balance between those dual responsibilities.

Both power and fish and wildlife have outspoken constituencies who track the Council's actions. Nowhere is the dichotomy of those interests more evident than in the responses to the Council's 1986 Draft Amendment Document for revising the Columbia River Basin Fish and Wildlife Program. The 178 comments submitted to the Council ranged from general to specific and encompassed projects in all four states in the basin. The agencies, tribes, utilities, recreation associations and other professional organizations in the region had their say, as did interested citizens.

Since the December 15, 1986, deadline for comments on the draft, Council members and staff have been sorting through them in preparation for a final decision on the program amendments. The Council plans to act on the proposed revisions to the program in mid-February.

The Council's deliberations do not constitute a juggling of competing interests but a careful weighing of them. Much is at stake. Millions of fish have been lost as a result of dam construction and operation in the Columbia Basin. Millions more will be lost if the Council does not succeed in restoring the balance between fish and power resources in the basin. In that context, the Council's balancing act assumes another dimension as it takes steps to save future generations of fish born in the basin.

The fish and wildlife program has seven major objectives:

- to help juvenile salmon and steelhead migrate downstream to the ocean;
- to improve their survival once the fish reach the ocean;

The Council's deliberations do not constitute a juggling of competing interests but a careful weighing of them.



- to help adult fish return upstream to spawn;
- to further reproduction of additional salmon and steelhead;
- to enhance resident fish, which do not migrate to the ocean;
- to enhance wildlife; and
- to ensure careful planning of future hydroelectric projects to lessen further negative impacts on fish and wildlife.

The Council's Draft Amendment Document has recommended measures to achieve each of those objectives to the degree that the hydroelectric system can be held responsible for damage to the fish and wildlife resources in the Columbia River Basin. Comments on the draft touched on virtually every one of the recommendations. Issues that received extensive comment included estimates of salmon and steelhead losses for which the hydroelectric system is responsible; Columbia River system and subbasin planning for salmon and steelhead production; mainstem passage for migrating fish; resident fish production; and wildlife protection.

The point/counterpoint nature of many of the comments illustrates the spectrum of views on these issues and points up the need for careful deliberations.

Salmon and steelhead losses

The Council staff's estimate of hydropower responsibility for the loss of 5 to 11 million salmon and steelhead in the basin was the focus of many comments. The Columbia River Inter-Tribal Fish Commission (CRITFC), composed of the Yakima, Nez Perce, Warm Springs and Umatilla tribes, praised the Council's efforts to establish hydropower responsibility for losses of those fish in the basin, but expressed concern that the Council did not estimate cumulative past losses caused by the hydropower system. The Commission estimated losses by the tribes at about 250 million adult salmon and steelhead. "This loss has imposed tremendous hardships on the Columbia River



Basin tribes," Commission representatives testified.

The Commission also cautioned against assigning credit for increased fish stocks to the wrong parties. "We expect that major increases in several anadromous [ocean-migrating] fish stocks will occur in the near future due solely to the management actions of fishery agencies and tribes ...," wrote Timothy Wapato, the Commission's executive director. "These increases should not be credited to the Council's efforts and counted against the hydro-power [system's] debt.

"It is far more likely that the Council's inaction in certain areas (especially mainstem passage) is likely to undo the efforts of the tribes and fishery agencies than that actions by these managers

will adversely impact the Council's progress," Wapato stated.

Some utilities questioned the data used to establish the 5 to 11 million range. They asked the Council to replace the concept of "hydropower responsibility for losses" with "reasonable fish production target levels" and to work toward improving the fish runs by that targeted amount. Al Wright, executive director of the Pacific Northwest Utilities Conference Committee (PNUCC), recommended striking the terms "hydropower responsibility" and "restoration" from the program because they "misstate the obligations of the hydropower system."

Wright wrote, "The Council should not set any loss estimate for hydropower responsibility because: (1) there is no scientifically reliable method for estimating this loss; and (2) it implies an obligation of the ratepayers to provide that number of fish. The ratepayers' obligation under the Northwest Power Act is to *improve* fish runs not to restore them."

Wright deemed the Council's proposed goal of doubling the fish runs — an increase of 2.5 million fish — a reasonable interim objective. He recommended that "Another 2 million by 2000" be a rallying cry "to galvanize the energies and resources of the region."

The Columbia Basin Fish and Wildlife Council (CBFWC) supported the Council's estimate of fish losses for which the hydro-power system is responsible and encouraged the Council to include the 5 to 11 million range in the new fish and wildlife program. The Basin Council (recently renamed the Basin Authority) represents fish and wildlife agencies and some basin Indian tribes.

River system and subbasin planning

Determining salmon and steelhead losses resulting from hydroelectric development is one aspect of the Council's system-wide planning efforts for the Columbia River Basin, alluded to in the Draft Amendment Document and elaborated on in the Salmon and Steelhead System Objective and Policies issue paper.

Systemwide planning provides a means to look at the big picture instead of taking a piecemeal approach to the Columbia River and its tributaries. The issue paper, which was distributed for public comment in October, described a proposed framework for coordinating improvements of fisheries in the basin. The interim objective of doubling the salmon and steelhead runs is being considered as part of that process.

The success of those efforts will depend on the ability of the Council, the fish and wildlife agencies, the tribes, federal power agencies and the utilities to achieve a balance in the basin. That balance, however, is subject to interpretation.

The Columbia River Inter-Tribal Fish Commission praised the evolution of the Council's work from a program focused on a list of projects to one focused on systemwide planning. The Commission observed that "the Council is entering a new and progressive phase in the implementation of the Northwest Power Act. ... To achieve systematic solutions and avoid fragmentary and compartmentalized treatment of issues, policy-makers must share complementary purposes and be willing to coordinate their decision-making on interrelated issues."

The U.S. Army Corps of Engineers also spoke of the need for balance, but interpreted the concept differently. It advocated the need to "strike a balance between production, passage losses and harvest" in managing salmon and steelhead runs. The Corps recommended using the

"Another 2 million by 2000" should be a rallying cry "to galvanize the energies and resources of the region."

Council's system planning computer model to analyze the interrelationships among those three. Calling the Council's interim objective of doubling the runs "arbitrary," the Corps reiterated its belief that harvest controls are essential to improving fish production.

Subbasin planning specific to individual tributaries was also the subject of numerous comments. The Draft Amendment Document proposes that fish and wildlife agencies and Indian tribes develop subbasin plans for 28 river systems in the Columbia River Basin, including the Columbia mainstem.

Calling subbasin production objectives and priorities for improving anadromous fish stocks, "the cornerstone of system planning," the Bonneville Power Administration remarked that the explicit definition of those objectives subbasin by subbasin would provide a means by which the Council can measure consistency of the subbasin plans with system-wide objectives.

The U.S. Forest Service reiterated its previous requests to include land management agencies in the planning process.

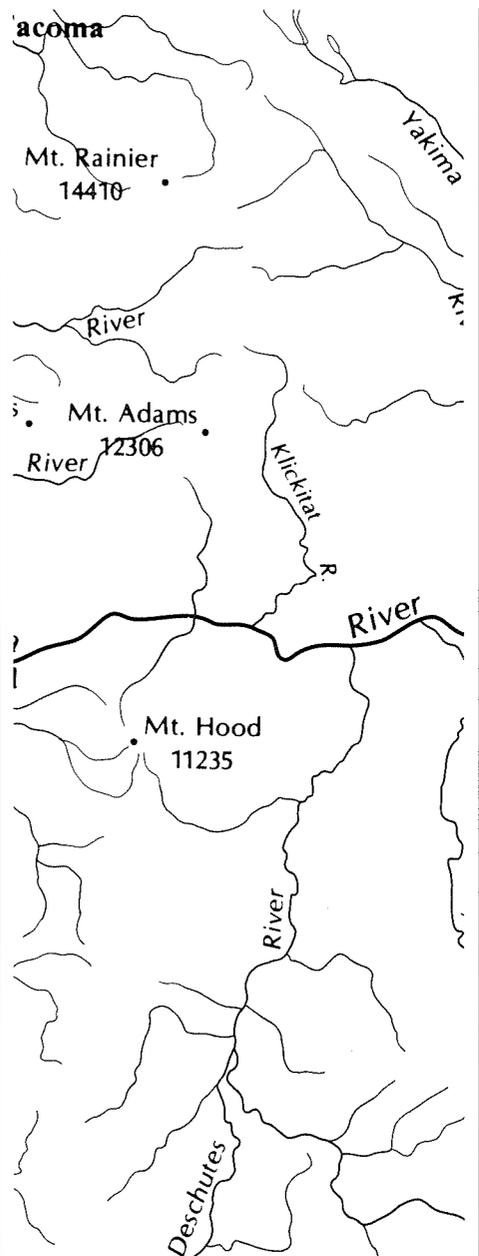
"The Council is entering a new and progressive phase in the implementation of the Northwest Power Act."

"Today, up to 60 to 75 percent of the remaining anadromous fish habitat in the basin occurs on lands administered by land management agencies most notably the USDA [U.S. Department of Agriculture] Forest Service and the [U.S. Department of the Interior] Bureau of Land Management," the agency wrote. "If lasting improvements of basinwide fish production and management are



to occur, common goals and teamwork will need to replace organizational and institutional barriers. The fish and wildlife program is an unusual opportunity to encourage this 'joining of forces.' "

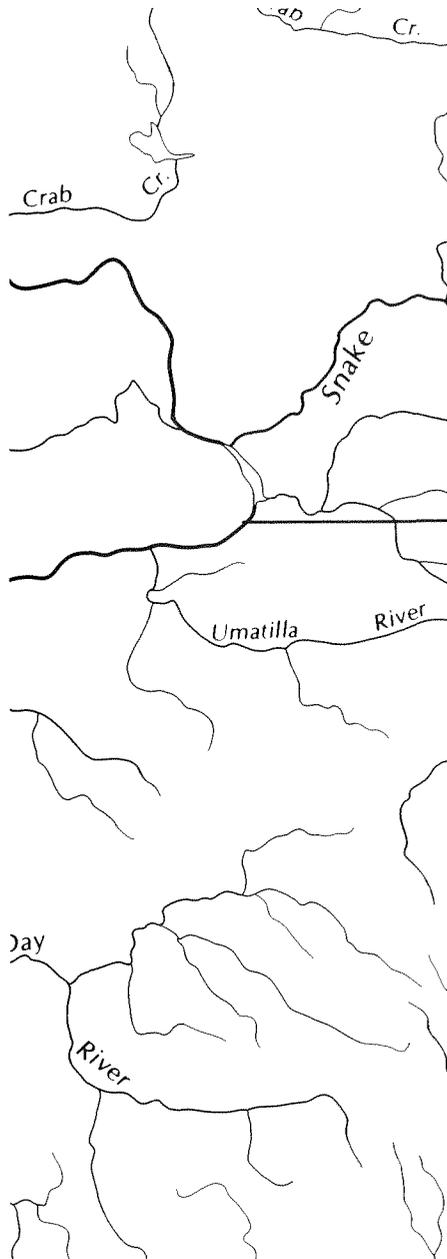
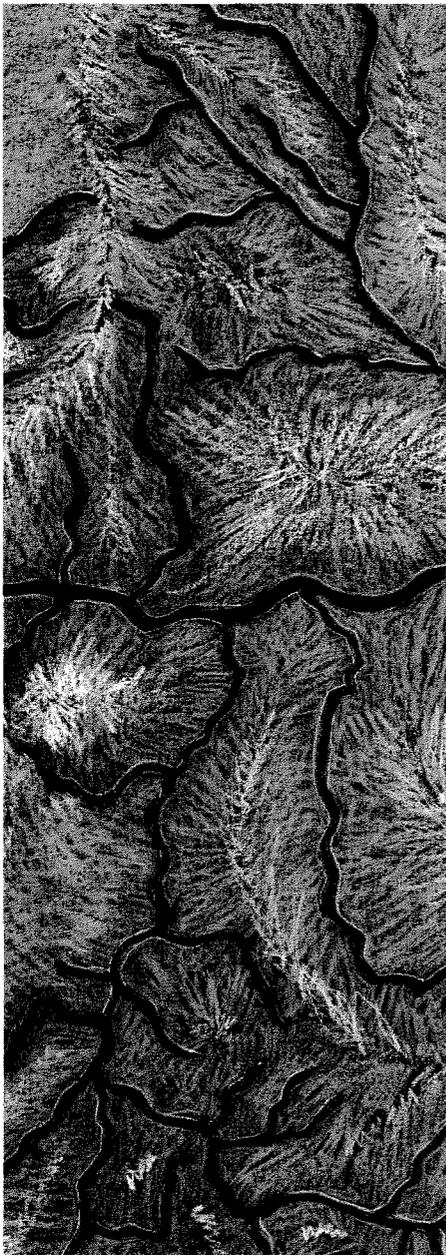
Some groups, notably recreational and sporting associations, expressed frustration with the amount of time planning has taken as opposed to actual program implementation. A comment by Robert C. Petersen, manager of the Port of Ilwaco in Washington, summarized those frustrations. "Planning is important," he wrote, "but the time has come to de-emphasize greater planning activities and get on with specific programs that are desperately overdue."



Mainstem passage

Measures to improve the ability of fish to move past Columbia River dams have long been hotly contested issues in the Council's fish and wildlife program. The Draft Amendment Document proved no different as water budget, spill, bypass systems and transportation continued to generate much comment.

In a preliminary decision, the Council proposed to reject proposals by the Columbia Basin Fish and Wildlife Council regarding spill and the water budget. Spill is the release of water through a spillway that bypasses a dam's



Rapids and Lower Granite dams. The water budget is a block of water set aside to be released for two months during the spring fish runs. It actually increases the flow of water between projects to speed the fish down the river to the sea. Timing is critical to juvenile migrants because they are undergoing the biological transformation that allows them to survive in salt water after living in freshwater streams. If they are stalled, their chances for survival decrease.

The explanation for recommending rejection of the proposal was that a weekly water budget accounting, coupled with flow fluctuation limits on weekends and holidays, would decrease smolt travel time as effectively as the fishery agencies' and tribes' proposal, at less cost to the power system.

The Pacific Northwest Utilities Conference Committee, on the other hand, praised the Council's preliminary decisions on spill and the water budget and recommended that neither be changed, because, in the words of Al Wright, the changes would not be "the least cost, biologically sound alternative for achieving the targeted survival."

Wright added, "Our view has always been that bypass facilities should be completed as quickly as possible to solve juvenile fish mortality problems and reduce the need to spill water."

turbines, thereby increasing the survival chances of fish that migrate up and down the river. It is controversial because it uses water that could otherwise pass through the turbines to generate electricity.

Spill is considered an interim measure to improve fish survival until permanent solutions can be put in place at each dam. The Council proposed to reject a Basin Council amendment to increase the levels of interim spill at Lower Monumental, Ice Harbor and The Dalles dams. In the Council's view, such an increase would not have substantially benefited upriver fish runs until bypass systems were installed in the dams.

In their comments, the Basin Council and the Columbia River Inter-Tribal Fish Commission both expressed disappointment at the Council's preliminary rejection of the spill proposal. "Bypass schedules are slipping and the need for a spill program is underscored by the need for an effective interim passage solution at projects such as Lower Monumental Dam," tribal representatives testified.

The Council also proposed to reject the fisheries agencies' and tribes' request to change the accounting procedure for the water budget from a weekly to a daily basis but included a provision to protect against extreme weekend flow fluctuations at Priest

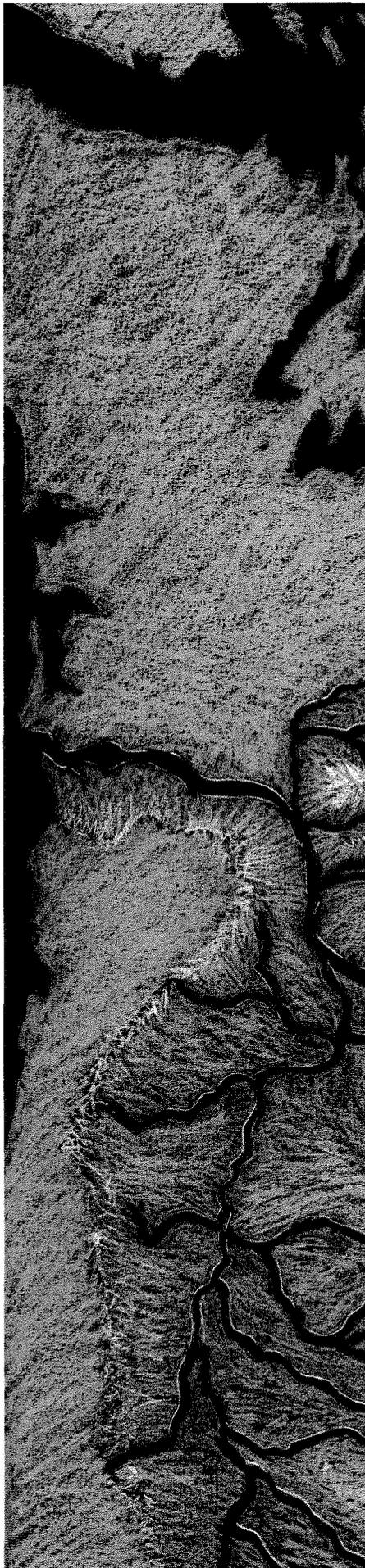
The Corps of Engineers recommended many revisions to the Council's amendments on water budget and spill at individual dams. Most of the revisions involved reducing the authority of fishery agencies and tribes in those areas.

The Corps restated its support for full transportation as a means to improve fish survival by moving them around the dams in trucks and barges. The Corps suggested removing language in the draft stipulating that transportation should be conducted under provisions developed by fish and wildlife agencies. The Council had proposed to reject the Corps' original full transportation recommendation, saying it would "take the fisheries agencies and tribes out of the decision-making process on transportation and therefore be inconsistent with the ... Northwest Power Act."

The Council extended the comment period on bypass and transportation issues until January 30, 1987, after the Corps announced its intention to further delay completion schedules for mechanical bypass systems that move fish away from turbines at certain dams.

Idaho Attorney General Jim Jones brought the issue of balance to the fore in his comments on passage issues. "The region may see a heightened level of conflict between fisheries interests and hydrosystem operators unless the present mainstem passage program is improved," he wrote.

The Clark-Skamania Flyfishers based in Vancouver, Washington, expressed frustration at the lack of progress on passage issues since 1982. "The vital necessities for improving wild salmon and steelhead runs to the Upper Columbia River are: 1) sufficient flows to push juveniles to sea; 2) effective bypass systems to pass juveniles around turbines rather than through turbines; and 3) interim spills to pass juveniles over dams where bypass is not in place or not operating efficiently. These same three vital necessities were emphasized in 1982 by the agencies, by the tribes, and in the testimonies of many of the Columbia River fishermen. ...



"To our surprise and dismay it has come as a shock to find there has actually been very little change in the bottom-line operation of Columbia River hydro projects since 1982 in provisions for either flow or spill and that of the 13 mainstem dams affecting fish passage only four of those have fully screened turbines ... and that bypass system completion dates on several dams are being set even further back rather than stepped up."

Resident fish

The Draft Amendment Document addressed two key areas regarding resident fish — fish that live in freshwater in the basin and do not migrate to and from the ocean like salmon and steelhead. The draft lists several projects that are either intended to make up for resident fish losses caused by hydropower development or to substitute resident fish for salmon and steelhead in areas where the ocean migrants have been prevented from returning because of major river blockages caused by dams.

The draft proposed to accept applications for four resident fish substitution projects above Chief Joseph Dam in eastern Washington and recommended Bonneville fund them because federal hydropower projects locked ocean-migrating fish out of the basin. Six other applications for projects were also proposed above Hells Canyon Dam in Idaho, but the draft did not designate a funding source because the blockages in those areas appear to have come from a number of causes.

A number of comments addressed those projects and their funding. Bonneville recommended rejection of resident fish substitution projects above Hells Canyon Dam because there is not enough proof that hydroelectric development is responsible for fish loss. Instead, Bonneville suggested "putting the burden of proof on the project sponsor to fully satisfy the Council's resident fish substitutions policies and principles."

Idaho Power Company officials stated their unwillingness to fund projects above Hells Canyon Dam, particularly the proposal of the Shoshone-Bannock Tribes to build a resident fish hatchery near American Falls in southeastern Idaho. Company officials cautioned the Council not to rely automatically on resident fish substitutions to mitigate losses of anadromous fish in blocked areas.

Charles Pace, director of the economic analysis office for the Shoshone-Bannock Tribes, commented that resident fish substitutions should complement the activities of fish and wildlife agencies and tribes. "However," he wrote, "full agreement and participation of all affected parties in the priority areas should not be viewed as a prerequisite for funding resident fish substitutions measures. The Council should avoid establishing a means for certain parties with a hidden agenda to derail measures which have significant merit and are consistent with all other criteria."

Wildlife

Many of the comments on wildlife pertained to the proposed inclusion of plans to mitigate the effects of Libby and Hungry Horse dams on wildlife in Montana. In responding to the draft, the Montana Department of Fish, Wildlife and Parks, which submitted the initial mitigation proposals, also recommended creating a committee to oversee implementation of the wildlife projects. The committee would be composed of department representatives, project operators, Bonneville and its customers. Several wildlife groups added their support to the wildlife mitigation plans.

Other comments supported the idea of a trust fund to help pay for mitigation projects. The comments of the Montana Department of Fish, Wildlife and Parks characterized that support. The trust fund "would reduce overall ratepayer obligation for those projects."



Department officials wrote, "If established over several years, a trust fund would be affordable without increasing the capital program of the Bonneville Power Administration. This is an important consideration during the present period of revenue shortfalls for that entity." In its comments, Bonneville proposed elimination of language concerning the trust fund, but did not entirely rule out the idea of a fund.

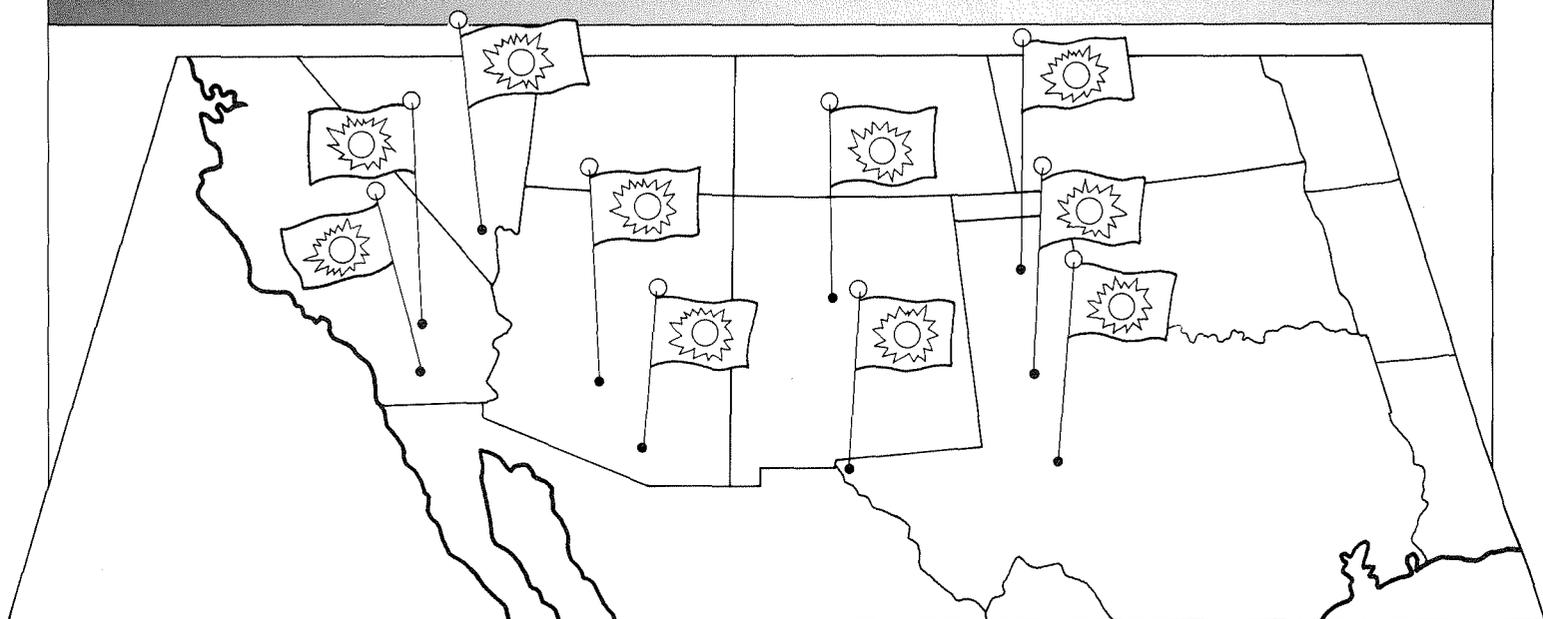
This summary has provided a cursory overview of the multitude of comments received on the many issues raised in the Draft Amendment Document. Issues such as salmon and steelhead research and individual projects such as the northeast Oregon hatchery also received a great deal of comment. At press time, the Council was in the process of making preliminary decisions on these issues, leading up to a final decision in February. The new fish and wildlife program will be covered in detail in an upcoming issue of *Energy News*.

As the Council weighs the many competing views on the fish and wildlife program in the attempt to restore balance to the basin, it will be guided by the larger significance of the program—the reason Congress specified that fish and wildlife concerns be considered equally with power interests.

The impact of the Council's actions will extend beyond the walls of fisheries agencies and tribal, utility and government offices. It will even extend beyond the boundaries of the Northwest. The beneficiaries will be people everywhere who rely on and appreciate the fish and wildlife that inhabit the Columbia Basin.

Among the reams of comments received by the Council, a one-page letter from Bret Stafford of Salem, Oregon, summed it up simply: "Fish must be given more consideration in the day-to-day management of the Columbia River and its dams! They are so important to our Indian people, our own feeling of identity and the Northwest economy and tourism."

Shorts



The Southwest shines in a recent list of the 10 best solar energy producing cities in the United States. All 10 cities, identified by the Solar Energy Research Institute, are located in what could roughly be called the Southwest. The cities are Albuquerque, New Mexico; Phoenix, Arizona; Tucson, Arizona; El Paso, Texas; Midland, Texas; Las Vegas, Nevada; Amarillo, Texas; Barstow, California; Lubbock, Texas; and Palm Springs, California. (Source: *ENERGYgram*, Oregon State University Extension Service, Corvallis, Oregon 97331)

Adding new meaning to the expressions “feedlot fish” and “salmon ranching,” Peruvians are turning a surplus of fish by-products into “beef” patties and “milk.” Peru’s national fish company already supplies that country’s elementary schools with about a million fish biscuits and the fish-meal milk. With backing from the Japanese, Peruvians now are building a \$10 million “marine beef” plant. So move over McDonald’s, fast food fish burgers are on the way. Can fish ice cream be far behind? One last hurdle to overcome — fish beef still costs more than the genuine article. (Source: *Pacific Fishing*, 1515 N.W. 51st, Seattle, Washington 98107.)

Japanese students are aiding that country’s commercial salmon fisheries by raising and releasing more than two billion salmon fry each year, according to Professor Masakazu Yoshizaki of Hokkaido University. The student project began in 1978 with the formation of the “Come Back Salmon Society.” They were responding to a history of declining salmon runs primarily caused by pollution in Japanese rivers. By 1949, most Japanese rivers were heavily polluted. Within five years, no salmonids could be found in that country’s streams. (Source: *The Trout and Salmon Leader*, P.O. Box 2137, Olympia, Washington 98507.)

Low-income homeowners make more repairs on their homes and are less likely than higher-income homeowners to seek financial assistance to help pay for the work. That is one conclusion in a recent study by Sextant Consultants, Inc., of Portland, Oregon. The study analyzed homeowners’ decisions about home improvements or repairs and the likelihood of conservation measures being included in these considerations. The study was prepared for Seattle’s municipal utility, Seattle City Light, with an eye to encouraging that utility’s customers to insulate their homes. The study also found that more than 75 percent of telephone survey respondents had recently taken some step to make their homes more energy efficient, and only 39 percent of them had taken advantage of tax credits, rebates or low-interest loans. (For more information, write: Jean Shaffer, Evaluation Unit, Seattle City Light, 1015 3rd Avenue, Seattle, Washington 98104)

In 1986, “more people collected paychecks in Washington, Oregon, Idaho and Montana than ever before,” but the increase was a small one, reports *Marple’s Business Newsletter*, from Seattle, Washington. The jobs were mostly low-paying and in urban centers rather than small towns or rural areas. Forest product workers, aluminum company employees and shipbuilders all took pay cuts last year. High-tech industries also suffered. The growth occurred in wholesale and retail trades, services and the financial sector. (Source: *Marple’s Business Newsletter*, 911 West-ern Ave., #300, Seattle, Washington 98104)

TRACING THE PATH OF POWER SALES

The path electrical power takes as it flies from turbines to towns throughout the West would probably surprise this region's electrical consumers. Most ratepayers are likely to think the power pipeline ends at the region's borders, or that only some comparatively minor portion of the Northwest's supply makes its way down the coast to California or to points east.

In fact, a great deal of this region's electricity makes its way south, but it is difficult to measure just how much. One way to gauge these sales is to tally up the amount of revenues they produce.

As the charts below (based on the Bonneville Power Administration's 1986 Annual Report) indicate, the Northwest depends heavily on marketing its power to California. In fact, Bonneville's biggest customers are not Northwest utilities — public or private. Approximately 80 percent of Bonneville's revenues come from 20 percent of its customers.

Together, the industries that purchase electricity directly from Bonneville (called direct service industries — principally aluminum companies) and California utilities pay nearly half of Bonneville's costs, underwriting this region's power system and sharing the expense for conservation, fish and wildlife restoration and other programs that benefit the Northwest.

More than 20 percent of Bonneville's revenues come directly from sales to California. This market was cut back severely in the past year because of reduced oil and natural gas prices that made it less expensive for California utilities to produce their own electricity using oil- and gas-fueled generators.

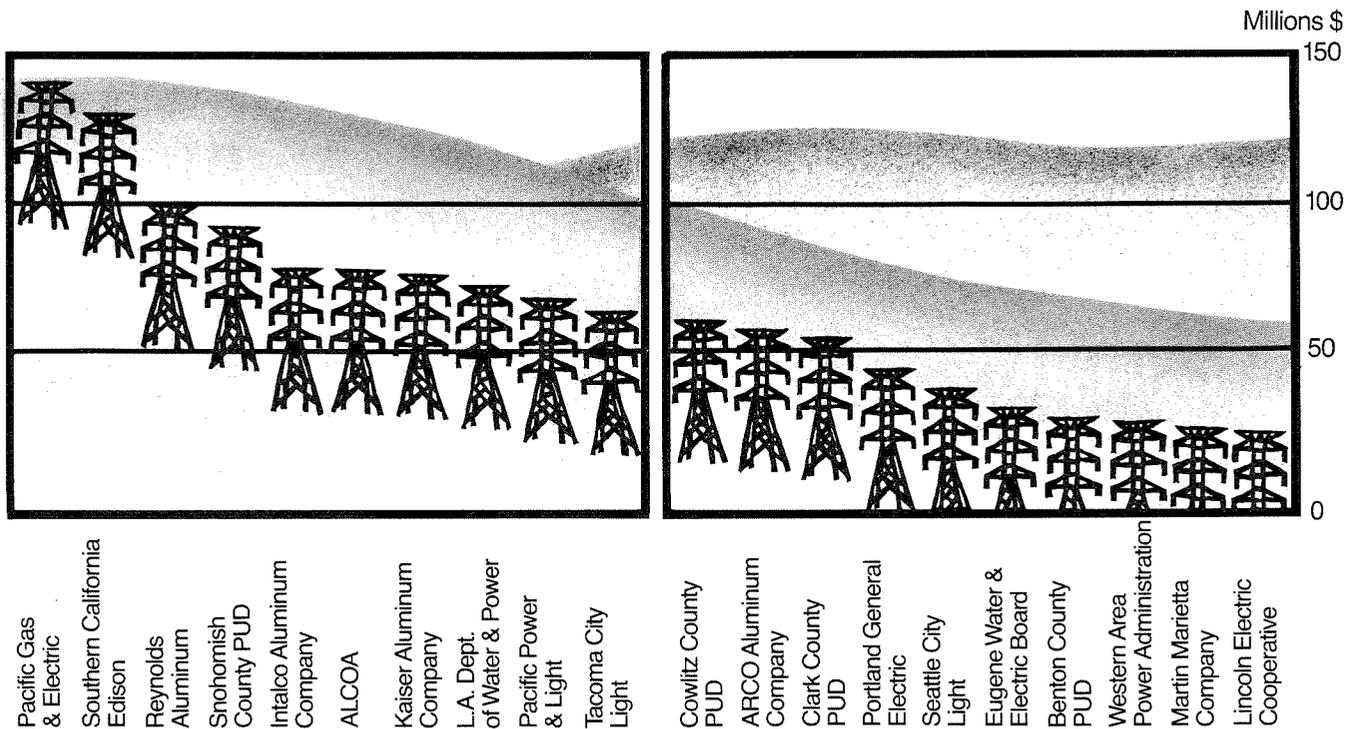
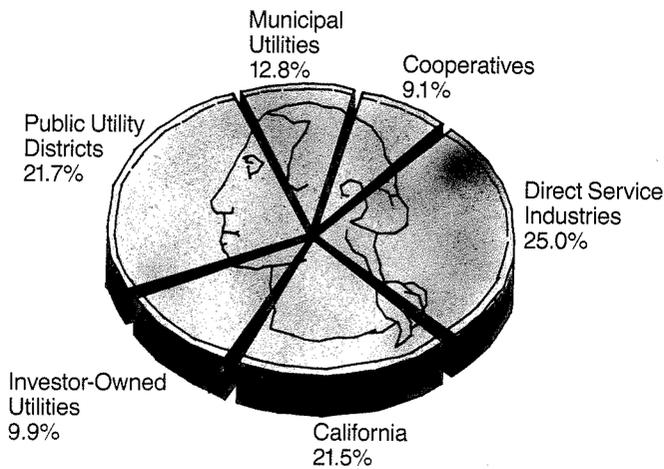


Figure 1: Bonneville's Top 10 Customers

Bonneville's biggest buyer is Pacific Gas and Electric, which serves large portions of northern and central California. Two other California utilities — Southern California Edison and the Los Angeles Department of Water and Power — are also in Bonneville's top 10. Four aluminum companies, two public utilities and three Northwest investor-owned utilities share the remaining top markets.

Figure 2: Bonneville's Next Largest

Two more aluminum companies are included in Bonneville's next-to-the-largest customer groups. More public utilities and Portland General Electric, the investor-owned utility serving portions of Oregon, are also in this group.



Bonneville's income is also vulnerable to depressed world prices for aluminum, because the region's aluminum smelters annually provide about a quarter of Bonneville's revenues. With the aluminum industry experiencing a slump, that drop in production is passed back to Bonneville as a reduction in power sales.

Such cuts signaled reduced revenues at Bonneville, with resultant budget cuts and announced rate hikes of 13 percent.

The charts break down purchases of Bonneville's power by utility or industry, by customer group and by state. Utilities that "exchange" power with Bonneville, selling Bonneville the power they produce at a higher cost, in return for Bonneville's delivering to them low-cost electricity, are not included in these descriptions. All figures are based on 1985 numbers described in Bonneville's 1986 Annual Report.

Figure 3: Bonneville's Revenues by Customer Group

The public utilities, municipal utilities and electric cooperatives combined make up Bonneville's largest revenue-producing group. The direct service industries (primarily aluminum companies) are second, followed closely by California.

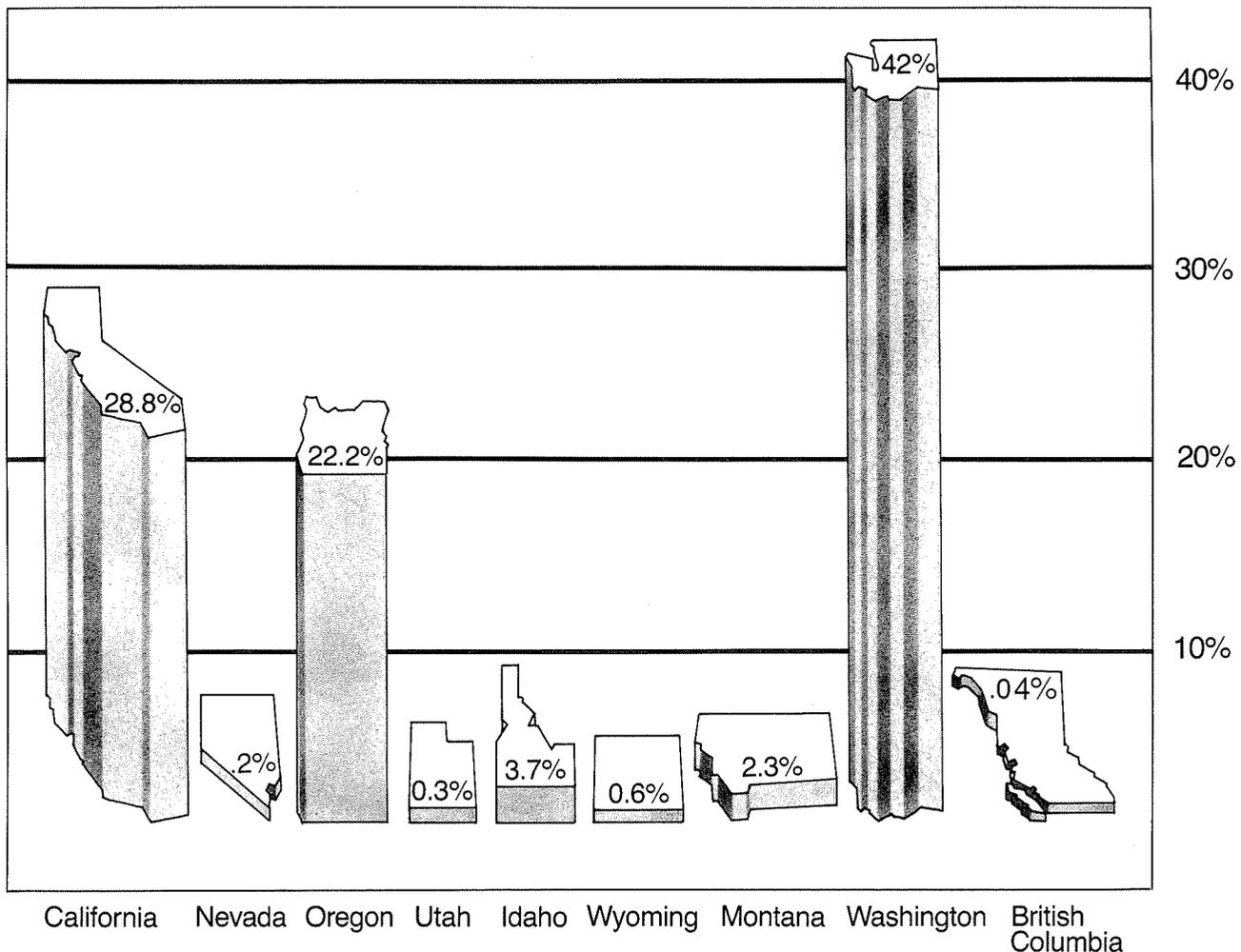


Figure 4: Bonneville's Revenues by State

The state of Washington buys more power from Bonneville than any other state, but California and Oregon together account for just over half of Bonneville's power sales. The remaining states purchasing power account for a fraction of Bonneville's sales.

Fish and Wildlife Update

By Ruth L. Curtis

Water Budget Agreement Reached

The new year was off to a good start with the Idaho Power Company and the Bonneville Power Administration reaching an agreement on the Snake River portion of the water budget. The water budget is a block of water in the Columbia River system set aside to be used in carefully timed releases to increase the river's flow during the spring juvenile fish run. It is designed to imitate a free-flowing river's natural spring runoff which speeds the migrating fish downstream to the ocean.

While the Columbia River portion of the water budget has been operating for several years, the Snake River portion has been stalled due to the lack of water storage capacity in the Snake Basin. The only projects capable of storing large amounts of water in that basin are Dworshak Dam on the North Fork of the Clearwater River, operated by the U.S. Army Corps of Engineers, and Brownlee Dam on the Snake River, owned by the Idaho Power Company.

The Corps has been participating in the water budget, but Idaho Power has argued that Brownlee's entire storage capacity was required for producing electricity.

The agreement between Bonneville and Idaho Power states that Idaho Power will participate in the water budget this year, if possible. If the company subsequently sustains power losses, Bonneville will make up those losses. If the agreement works well this year, it may be refined and renewed next year.

New Fish and Wildlife Program

The Northwest Power Planning Council was scheduled to adopt its 1987 Columbia River Basin Fish and Wildlife Program in February. This concludes a year-long process that began last February when interested organizations and individuals answered the Council's call for recommendations for amending the 1984 program. The Council has spent the year studying those recommendations, making preliminary decisions (contained in the Draft Amendment Document), and listening to public comment. See the article on page 23 for an overview of the comments the Council received. The new program will be published and available to the public in late spring. (See the back cover to order a copy.)

Hydropower Assessment Study

The information-collecting phase of the hydropower assessment study (see "A Map of Values—Hydropower Assessment Study Takes Shape," *Northwest Energy News*, Volume 5; Number 2, February/March 1986) has been completed, and the resulting computerized data bases have been reviewed by fish, wildlife and land management agencies, Indian tribes and other interested parties.

Through the study, the Council is collecting information to help identify alternatives for classifying and designating certain stream and wildlife habitat in the Columbia River Basin to be protected from future hydroelectric development. The study will also help the Council determine how much hydropower can be relied upon as an energy source for the region.

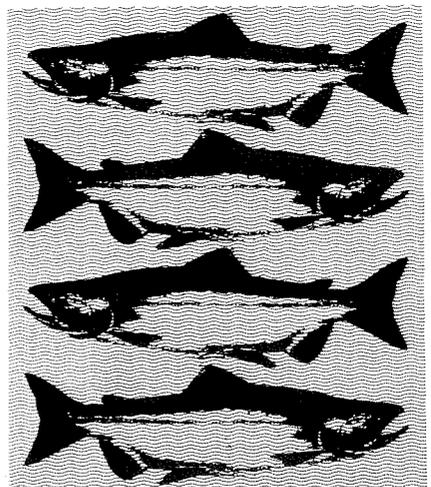
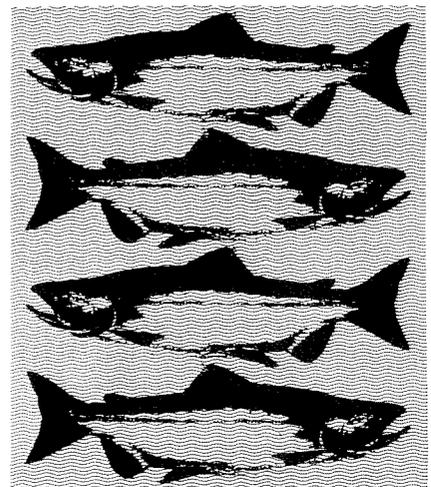
The study has three components. The first is an anadromous fish productivity study carried out by the Council. It characterizes virtually all the stream reaches in the Pacific Northwest on the basis of their salmon and steelhead productivity, their importance as fish migratory routes, the quality of their spawning and rearing habitat and other factors.

The second part of the study has identified the value of each stream for wildlife and fish that do not migrate to the ocean and for recrea-

tional and other cultural uses. This segment of the hydropower assessment study was coordinated and funded by the Bonneville Power Administration and conducted at the state level by state and federal agencies and Indian tribes working together.

The last part of the study is a hydropower site data base developed by the Corps of Engineers. It contains information on costs, capacity, output, location and other characteristics of existing and proposed hydroelectric projects in the Northwest.

After all the information was collected, the Council's hydropower assessment steering committee identified possible criteria for evaluating the data and establishing lists of potential protected areas. This work will be described in an issue paper that is to be distributed late this spring for public comment.



In The News

Continued from page 5

More communities join ranks of code adopters

The last few months of 1986 brought a flurry of building code activity by local governments on the model conservation standards. The standards were designed by the Northwest Power Planning Council to produce significant energy savings by making new electrically heated houses and commercial buildings super energy efficient.

New communities that agreed to treat the standards as building codes include an Idaho county, two Washington counties and a Washington city.

Seattle, the region's largest city, has adopted an energy code that will provide energy savings equivalent to the model conservation standards, say city officials. Seattle's code was adopted by the City Council on September 15 and took effect on October 24.

The new code is at the level of Washington's statewide code for residential buildings (providing about half the savings of the standards), but it exceeds the standards for commercial buildings.

Under the new provisions, major commercial projects must be built to a level 10 percent more efficient than the commercial model conservation standards. Since these buildings constitute the major area of projected new electrical load from buildings, the city estimates this approach will deliver energy savings equivalent to those of adopting the standards.

Bingham County, in southeastern Idaho, joined the ranks of model standards adopters that are making southeastern Idaho the energy conservation corner of that state.

Bingham is adjacent to Bonneville County and the city of Idaho Falls, two other communities in Idaho which have adopted the standards. Several municipalities in the two counties have also held code adoption hearings but have not yet made final decisions.

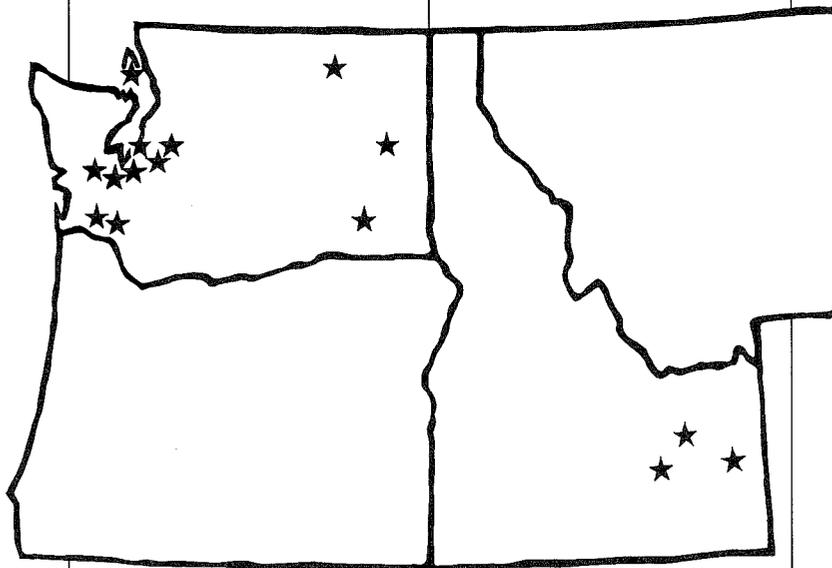
Columbia and Wahkiakum counties and the city of Fife are Washington's new adopters. The two counties are on opposite ends of that state, with Wahkiakum at the mouth of the Columbia River and Columbia County one county east of the confluence of the Columbia and Snake rivers. The small town of Fife is near the city of Tacoma.

In other news, Grays Harbor County, a long-time leader in regional conservation efforts, revoked its earlier model

conservation standards adoption. County Commissioner Mike Murphy, one of two commissioners voting down the standards in a 2-1 call, stated his belief in the model standards themselves, but expressed frustration with changes in programs to implement the standards.

Model conservation standards adopters now include the Washington cities of Tacoma, Stanwood, Elma, McCleary, Republic, Milton, Fircrest, Cathlamet, Cheney and Fife, and Columbia and Wahkiakum counties in that state. Idaho adopters are Bonneville and Bingham counties and the city of Idaho Falls.

—Jim Nybo



Calendar

March 11-12— Northwest Power Planning Council meeting in Boise, Idaho.

March 11-12— "HVAC & Building Systems Congress" in Anaheim, California. Sponsored by the Association of Energy Engineers, Western Area Power Administration and Southern California Edison. For more information: Association of Energy Engineers, 4025 Pleasantdale Rd., Suite 420, Atlanta, Georgia 30340, 404-447-5083.

March 13-15— "Fifth Annual Western Public Interest Law Conference" at the University of Oregon School of Law in Eugene, Oregon. Sponsored by the Western Natural Resources Law Clinic and the Land, Air, & Water (LAW) student research group. For more information: Western Natural Resources Law Clinic—LAW, School of Law, University of Oregon, Eugene, Oregon 97403, 503-686-3823.

March 14— Sturgeon Workshop at the Trojan Visitor Center Auditorium in Rainier, Oregon. Sponsored by the Oregon Chapter of the American Fisheries Society and Oregon State University's Columbia County Extension Program. For more information: Jim Bergeron, 503-325-8573 or 503-397-3462, or Dan Guthrie 503-754-4531.

March 16-20— "Energy from Biomass and Wastes" in New Orleans. Annual conference sponsored by the Institute of Gas Technology. For more information: Susan Robertson, Institute of Gas Technology, 312-567-3881.

March 22-27— 1987 Solar Energy Conference in Honolulu, Hawaii. Sponsored by the Heat Transfer and Solar Energy Divisions of the American Society of Mechanical Engineers, Japan Society of Mechanical Engineers and the Japan Solar Energy Society. For more information: G. Tansey, American Society of Mechanical Engineers, Department C-494, Accounting Service Center, 22 Law Drive, P.O. Box 2900, Fairfield, New Jersey 07007-2900, 212-705-7795.

March 23-27— "Managing for Viable Populations" course at Stanford University, in Palo Alto, California. Jointly developed by the USDA Forest Service, USDI National Park Service, USDI Fish and Wildlife Service, and the University of Michigan. For more information: The University of Michigan, School of Natural Resources, Wildlands Management Center, Dana Building, Ann Arbor, Michigan 48109-1115.

April 8-9— Northwest Power Planning Council meeting in Montana. Call Council office for location.

April 22-26— Association of American Geographers Annual Meeting at the Hilton Hotel in Portland, Oregon. The 1987 program will focus on the Pacific Northwest. For more information: Association of American Geographers, 1710 Sixteenth Street, N.W., Washington, D.C. 20009, 202-234-1450.

May 13-14— Northwest Power Planning Council meeting. Call Council office for location.

June 15-19— 1987 Cogeneration Congress in Cherry Hill, New Jersey. Sponsored by the Association of Energy Engineers, the New Jersey Department of Energy and Energy Initiatives. For more information: Association of Energy Engineers, 4025 Pleasantdale Rd., Suite 420, Atlanta, Georgia 30340, 404-447-5083.

June 10-11— Northwest Power Planning Council meeting in Washington. Call Council office for location.

June 22-26— International Symposium on Fisheries Acoustics in Seattle, Washington. Sponsored by the Northwest and Alaska Fisheries Center of the National Marine Fisheries Service. Organized with the cooperation of the International Council for the Exploration of the Sea, and the Food and Agriculture Organization of the United Nations. For more information: Martin O. Nelson, National Marine Fisheries Service, 7600 Sand Point Way N.E., Building 4, Seattle, Washington 98115-0070, 206-526-4165.

Compiled by Ruth L. Curtis

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but will be sent to you as soon as possible.)

Publications

- 1987 Columbia River Basin Fish and Wildlife Program (See page 23. Please do not check if you ordered the Draft Amendment Document. The new program will be sent to you automatically when available in late spring.)
- 1986 Northwest Power Plan
- Final Model Conservation Standards Amendments

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

- Northwest Energy News* (this bimonthly magazine)
- Update!* (public involvement newsletter mailed with the Council meeting agenda)

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(Or call Judy Allender at the Council's central office, 503-222-5161, toll free 1-800-222-3355 in Idaho, Montana and Washington, or 1-800-452-2324 in Oregon.)

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