NORTHWEST ENERGY NEWS

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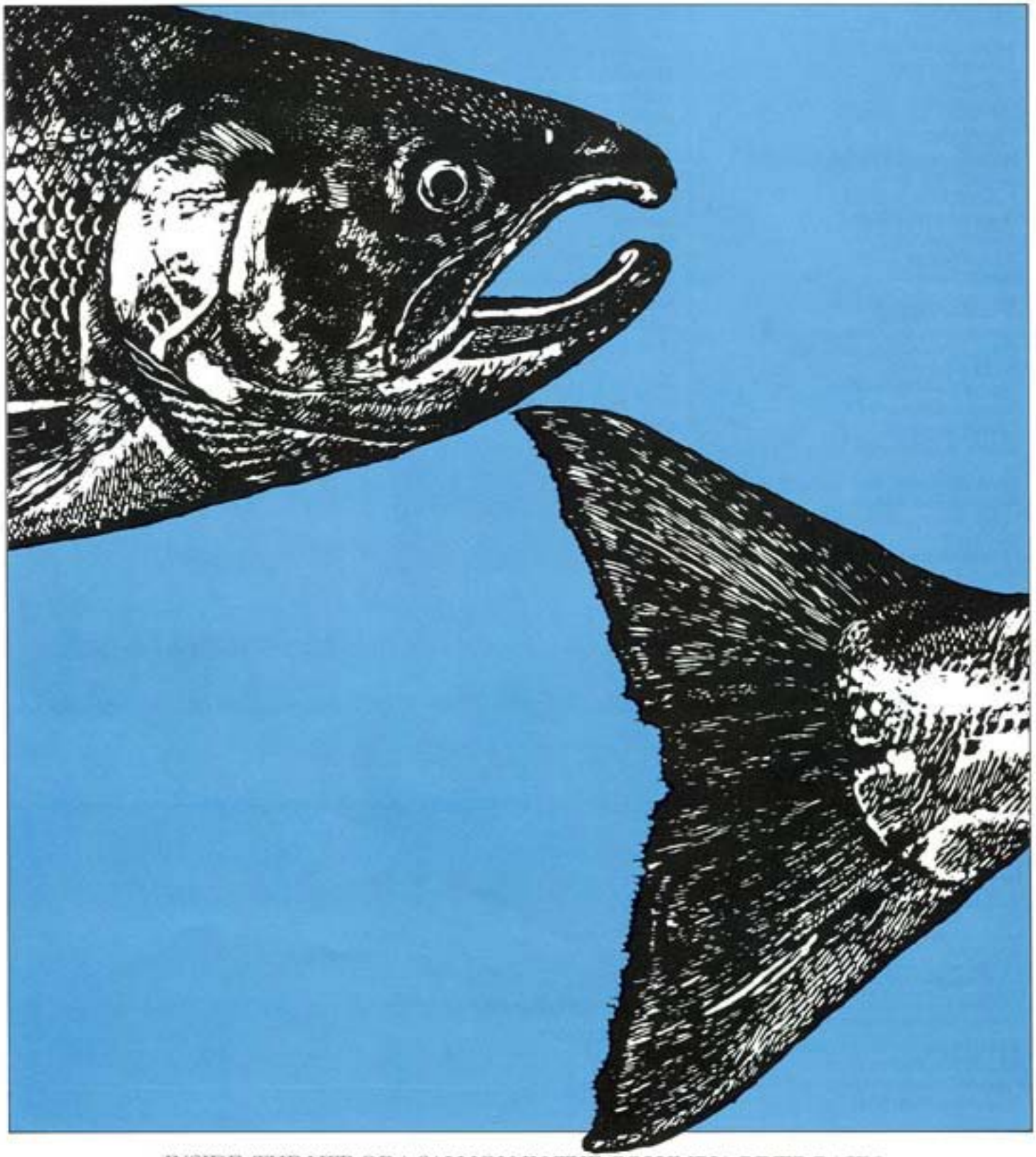

INSIDE: THE LIFE OF A SALMON IN THE COLUMBIA RIVER BASIN

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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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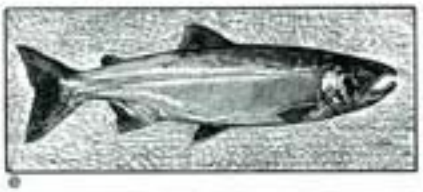
Editor's Notes

Summertime! In Idaho there's a celebration for a new kokanee hatchery. In Portland, Oregon the first commercial building selected for the "Energy Edge" competition is nearing completion. More buildings and more classes of buildings have been added to the program. In western Montana, Canada geese and osprey are "time sharing" nests built by the osprey, then settled into by the geese. The Pacific Northwest is buzzing with activity and there's a sampling of that activity in this issue.

We also look at the possible effects of world oil prices on the Bonneville Power Administration's repayment on page 11. And share with you an afternoon conversation with Merrill Schultz, executive director of the Intercompany Pool—an association of investor-owned utilities.

In our continuing effort to encourage participation in the Columbia River Basin Fish and Wildlife Program, Ruth Curtis, our special departments editor, has compiled information on the life cycle of Columbia River salmon and steelhead for our center spread.



COVER ILLUSTRATION: This month's cover art is reproduced from a woodblock print by Portland artist and printmaker Tom Prochaska.

Photographs: Carlotta Collette

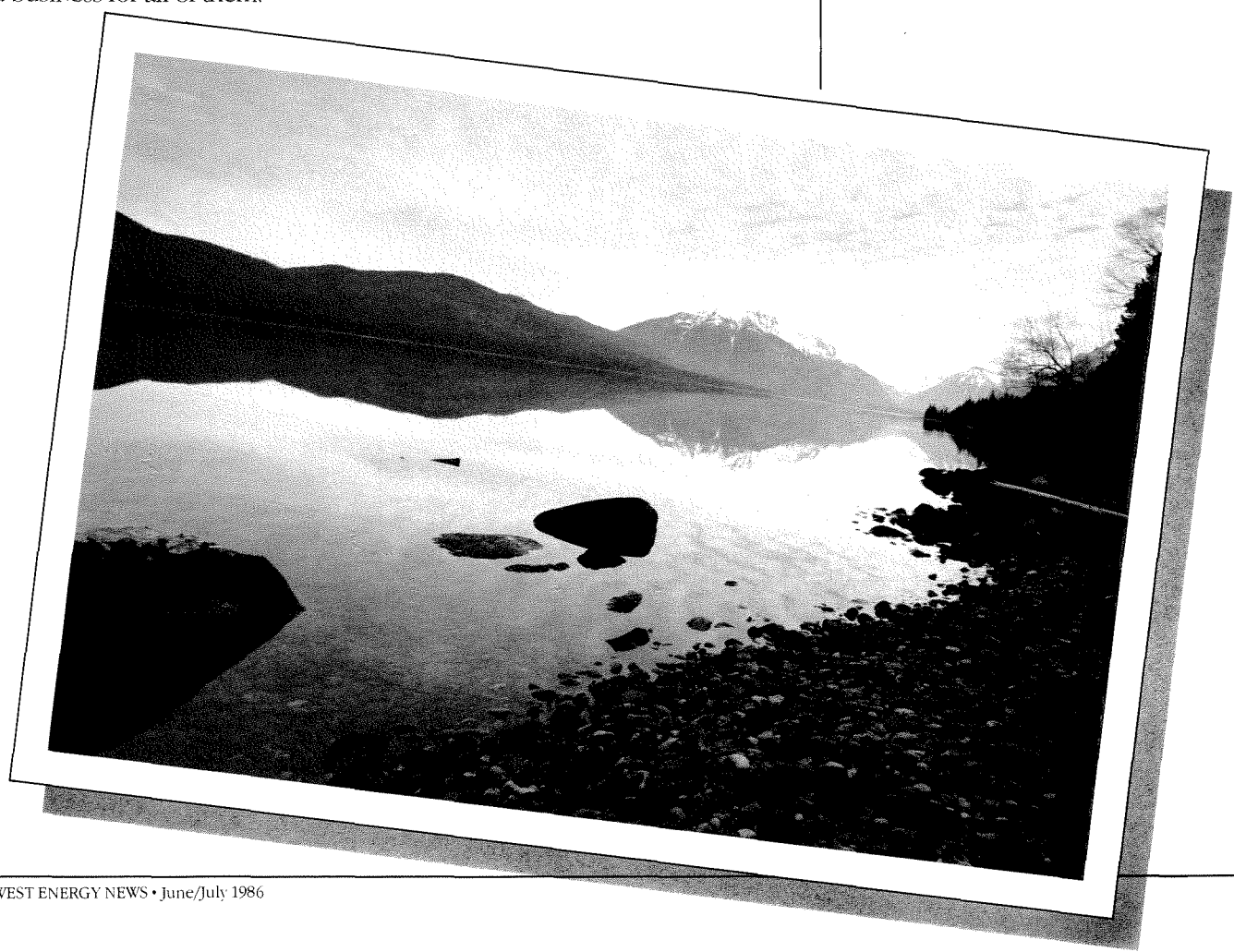
Contents

MONTANA'S UNCOMMON COLLABORATION

by Carlotta Collette

It wasn't just a spirit of environmentalism that spurred the Montana Power Company to sponsor studies to save small fur-bearing mammals or the resident fish of Flathead Lake. And while representatives from Washington Water Power may admit to going beyond their licensing requirements to help rebuild the fishery in the vicinity of their Noxon Rapids and Cabinet Gorge dams in Montana, it isn't altogether altruism that led to that decision either.

These investor-owned utilities are part of an unlikely team, loosely held together by the Montana Department of Fish, Wildlife & Parks and the Northwest Power Planning Council. They are working alongside the Confederated Salish and Kootenai Tribes, the Bureau of Reclamation, the Army Corps of Engineers, Pacific Power and Light Company, the U.S. Forest Service, U.S. Fish and Wildlife Service and the Bonneville Power Administration, which provides primary funding for the research. They are all trying to figure out ways to preserve and restore fish and wildlife populations in northwestern Montana. And they're doing it because it's good business for all of them.



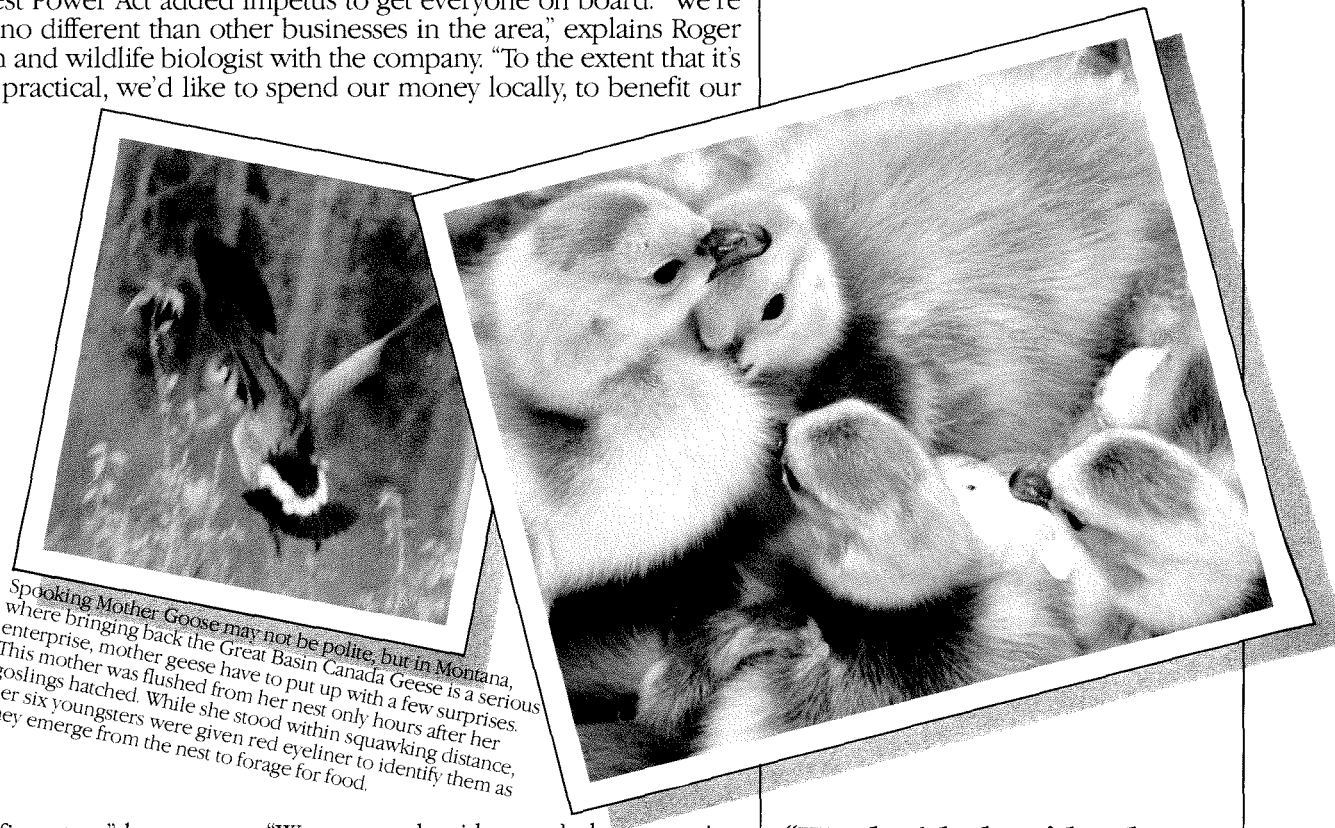
Photographs: Carlotta Collette

Don Sprague, the manager of Montana Power's environmental department candidly justifies his company's involvement in the multi-million dollar project. When the Northwest Power Act of 1980 ordered equitable treatment with power for fish and wildlife in the Columbia River Basin, he says, "we talked to several attorneys to see how we needed to relate to it. We were concerned about spending ratepayers' money when some of the dams were over 70 years old. We were also convinced there was a mosaic of impacts layered on each other that had all contributed to the fisheries' decline."

Ultimately, however, Sprague continues, "We decided we'd rather spend our money on the resource than on lawyers' fees. Our objections could get us tied up in court for years, and nobody would benefit."

At about that point in the decision making, the Montana Department of Fish, Wildlife & Parks (MDFWP) arrived with its piece of the Columbia River Basin Fish and Wildlife Program (written by the Council pursuant to the Power Act) and what Sprague refers to as a "very reasonable set of proposals." Sprague points out that, with the Department, "we're working in the real world. Other state agencies are pretty vague. They still seem to be saying—'You damaged it, you have to replace it.' With the Montana Department, we can come back on each proposal if we disagree or if we feel we can do something for less money. Each step has been negotiable, cooperative. We don't have time to fight with them. We're professionals handling professional matters. We may disagree sometimes, but we disagree amicably."

Washington Water Power representatives concur. Although their own environmental reparations in Montana have been going on for over three decades, they say the Northwest Power Act added impetus to get everyone on board. "We're neighbors, too, no different than other businesses in the area," explains Roger Woodworth, fish and wildlife biologist with the company. "To the extent that it's reasonable and practical, we'd like to spend our money locally, to benefit our resources."



Spooking Mother Goose may not be polite, but in Montana, where bringing back the Great Basin Canada Geese is a serious enterprise, mother geese have to put up with a few surprises. This mother was flushed from her nest only hours after her goslings hatched. While she stood within squawking distance, her six youngsters were given red eyeliner to identify them as they emerge from the nest to forage for food.

"Montana's a fine state," he stresses. "We can work with people here, not just debate issues. Other states seem to just have confrontations. Of course, a lot of what makes it work is the Department's consistent focus and level of cooperation. They know what they want, and they're willing to work with everyone to achieve that. It makes it really pleasant to work with them."

This level of professionalism and cooperation impressed members of the Northwest Power Planning Council at their meeting in Missoula, Montana in April. John Fraley, one of MDFWP's coordinators of the many fish and wildlife studies underway, presented a video tape overview of work in progress in the Flathead Valley. A panel of representatives of the various participants in the restoration also described their work and responded to Council questions.

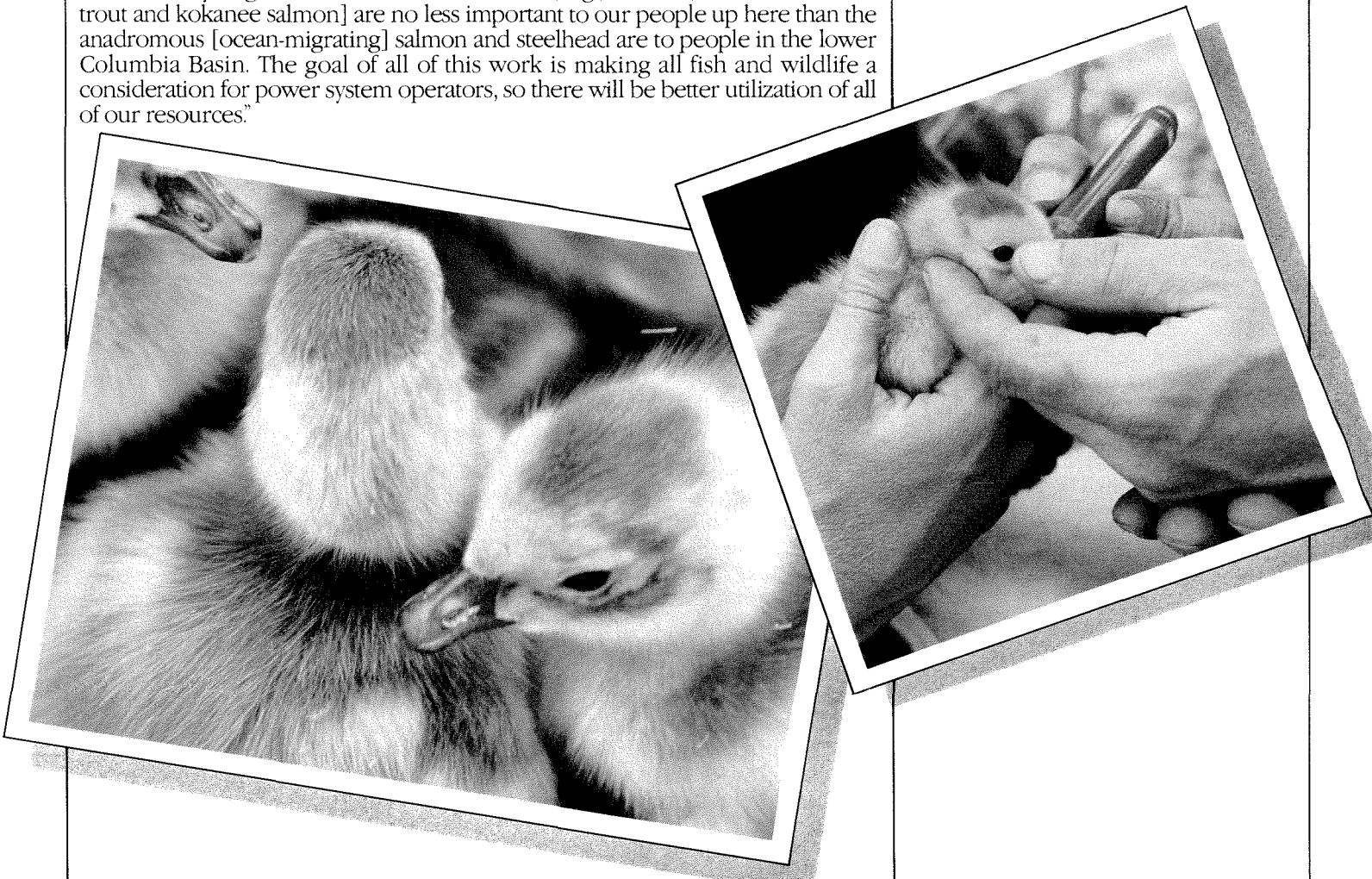
Council Chairman Bob Saxvik commended the group for their "leadership in advancing the work of the Columbia River Basin Fish and Wildlife Program." Montana Council member Gerald Mueller proudly joined in the praise for his

"We decided we'd rather spend our money on the resource than on lawyers' fees."

state's successes, adding that he was pleased to see Montana illustrate "how things can really be done. I hope we can see more and more of this activity both in Montana and in other states as well," he added.

The work going on in Montana is evidence of that state's serious attachment to its great open spaces. Montanans annually spend more than $220 million on the pursuit of big game, birds and waterfowl, and salmon and trout. And few sites in the state are more generously outfitted with fish and wildlife and topographic grandeur than the valley through which flow the Flathead, Kootenai and Clark Fork rivers. Backed up against the Swan Mountain range of the Rockies, the Flathead Valley wears a pearly string of snow caps around its perimeter. The lakes and reservoirs that reflect this view are deep, cold and clear. Spectacular Glacier National Park rises up from the northern edge of the valley.

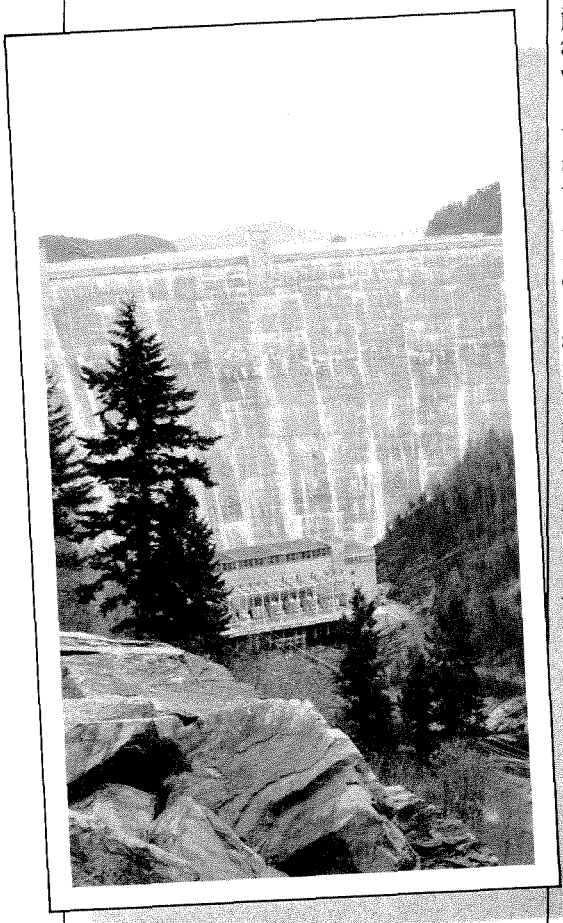
While there are no ocean-migrating salmon and steelhead there, Dave Cross, of the Confederated Salish and Kootenai Tribes, explains that "our resident fish stocks [fish that only migrate within freshwater reaches, e.g., rainbow, bull and cutthroat trout and kokanee salmon] are no less important to our people up here than the anadromous [ocean-migrating] salmon and steelhead are to people in the lower Columbia Basin. The goal of all of this work is making all fish and wildlife a consideration for power system operators, so there will be better utilization of all of our resources."



One hears expressions such as "holistic approach," "ecological systems" and "the new age for fish and wildlife" when speaking with almost any of the Montana project participants. The state's approach is unique in that fish and wildlife are being studied together because, according to Cross, the resources are all "intricately tied together. There's no way to separate them."

The projects of particular concern to his tribes are good examples of this linkage. They involve the Hungry Horse Dam on the South Fork of the Flathead River, the river itself, Flathead Lake through which the river pours, and Montana Power's Kerr Dam, at the outlet of the lower Flathead River at the base of the lake. Cross explains the effect of dam releases at Hungry Horse in terms of erosion below the dam, problems with fluctuating water levels in the lake that affect nesting birds, geese and resident fish populations, and problems that are passed on to Kerr Dam below Hungry Horse. "If Hungry Horse discharges, it affects all of the lower river," he argues. "You can't do something to one end of this system without affecting everyone else."

Photographs: Carlotta Collette



Hungry Horse Dam on the South Fork of the Flathead River in western Montana.

MDFWP's Fraley agrees. He describes this work as "a set of restoration steps to link together various projects." The Montana efforts could result in flow restrictions at some of the nine dams in the study area, the construction of hatcheries to supplement natural fish populations (see related news item on the opening of the jointly funded kokanee hatchery below the Cabinet Gorge Dam, page 26), acquisition of new wildlife habitat and improvements of existing habitat in the valley.

But the ecosystems in northwestern Montana used to function pretty well without all of this intervention. A flood might come in the spring, bigger than the annual runoff. Some ground-nesting geese might be flushed, and their young washed away. A bad drought could leave trout eggs dry. A few years later, the reduction in the number of returning spawners caused by that earlier drought might trouble grizzly bears and bald eagles who usually feast on the dying and dead fish.

In general though, the fish and wildlife in the basins of the Flathead, Kootenai and Clark Fork rivers were thriving when white explorers and fur traders arrived in the early 1800s. The fur-bearing animals sought by the traders were the first wildlife species to suffer from the intrusion. After only 50 years of the trade, finer pelts became scarce, and deer hides replaced them as the only fur that was still plentiful enough to be marketable.

The intricate fabric of interdependent life forms that Fraley and Cross describe was torn. The system that had been precisely balanced by food chains and other behavioral connections was disrupted.

This first destruction in the system was followed by others, as wildlife habitat was transformed into towns and railroad tracks, and hydroelectric dams restrained the rivers.

"You can't do something to one end of this system without affecting everyone else."

So while the value of the nine dams generating power and controlling flooding in the valley is unquestionable, they, nonetheless, operate at great risk to the fish and wildlife that once prospered there. What the people at the MDFWP would like to see is a careful balancing of the valuable hydropower operations and the equally valuable natural resource. Consequently, they are taking this ecosystems approach to their restoration work. They are studying the many species of fish and wildlife that have been affected by the dams in order to understand, not only how each species has been affected, but also to see how the species interact and how this interaction can be nurtured as part of an overall finetuning of the riverine and terrestrial habitats. They would like to see changes in the hydrosystem like those already in place at Hungry Horse Dam and soon to begin at Noxon Rapids.

Hungry Horse Dam was completed in 1951, immediately blocking about one-third of the spawning areas for cutthroat and bull trout migrating upstream from Flathead Lake. The reservoir behind the dam flooded 35 miles of streambed and several tributary mouths and caused major problems for fish within the reservoir. Shallow spawning fish suffered losses when reservoir levels dropped an average of 80 feet below the full level, stranding fish nests and young fish along the dry beaches. Gamefish in the reservoir also lost much of their food supply with the drawdowns. Similar effects were felt on kokanee salmon spawning below the dam, when operations held back flows or released unmanageable ones.

After more than three years of studies of the problems both above and below Hungry Horse, MDFWP enlisted the cooperation of the Bureau of Reclamation, which operates the dam, and the Bonneville Power Administration, to restrict flows from Hungry Horse during the spawning season.

Similar problems are being studied at all nine of northwestern Montana's hydropower projects, and similar levels of cooperation appear to be forthcoming. With the Columbia River Basin Fish and Wildlife Program providing the backbone for all of the integrated projects, and the uncommon collaboration of nearly everyone with a possible role to play, there is great promise for the future of the trout and salmon, the small furbearers and big game and the many birds and waterfowl in northwestern Montana.

REWORKING THE PROGRAM

by Carlotta Collette

There's another transformation in the works for the Columbia River Basin Fish and Wildlife Program. The call for recommendations to amend the program went out last summer, and more than 80 proposals for changes or new emphasis were received.

Of special interest are amendment applications concerned with major mainstem Columbia and Snake river issues. These include proposals related to accounting procedures for the water budget to aid downstream salmon and steelhead migrations, spill of water to help fish past dams operated by the U.S. Army Corps of Engineers, and the Corps' proposal to increase the transportation of juvenile salmon and steelhead on barges and trucks, to move them past the dams. The Northwest Power Planning Council heard applicant briefings and public comment on these mainstem issues at its June meeting in Idaho.

The remaining proposals are currently being reviewed by Council staff in preparation for release of a draft amendment document, which will be available for public review September through mid-December. The staff is informally consulting with applicants and other interested parties through July. Judy Allender, in the Council's central office (see inside front cover for phone number), is scheduling opportunities to discuss specific amendment issues with the appropriate fish and wildlife division staff.

This schedule, revised from an earlier plan, will allow for a longer public comment period next fall.

What are the concerns?

The applications that have been received rekindle earlier questions in the basin and raise a few new ones. Fish and wildlife agencies and Indian tribes, for example, are recommending increased spill levels at U.S. Army Corps of Engineers' dams in the mainstem of the Columbia and the lower Snake rivers. In February, the Council rejected an identical proposal but extended the spill period to cover summer migrations.

Several other proposals deal with accounting for use of the water budget (the body of water released from the dams to aid downstream juvenile fish migrations) and related institutional processes through which the water budget is implemented.

New hatcheries for both salmon and steelhead and resident fish, such as bull and cutthroat trout and kokanee, were recommended in several applications. At least six new hatcheries have been submitted as proposals to be added to the fish and wildlife program.

The U.S. Forest Service and other agencies have proposed several measures to increase natural production of salmon and steelhead in the Columbia River Basin. These measures include clearing obstructions to fish passage on tributaries in the basin where spawning and rearing habitat exists above the blockage, and improving existing habitat to provide better cover, resting areas and streambank stabilization. In addition to these proposals, seven more fish passage improvements have been recommended for the Yakima River Basin, where work is currently underway to open passage to the habitat that remains intact above irrigation dams.

Applicants also proposed that ratepayers fund fish and wildlife agencies and Indian tribes to carry out planning efforts on subbasin fish production, and that Bonneville develop enforceable conditions for fish and wildlife protection that would apply to generating resources attempting to gain access to the Northwest/Southwest Intertie. The intertie is the powerline on which electricity is transported from the Northwest to California markets.

Other planning issues

Major studies will be producing results this year, and it is the Council's intent to integrate at least some of the findings from these efforts into the newly amended fish and wildlife program. The first of these is the Section 201 Goals Study to provide a framework for the salmon and steelhead restoration in the basin. (See Goals Study Update on page 17.) Products from this study will include a Council statement of salmon and steelhead losses in the Columbia River Basin, an estimate of the hydropower-related portion of those losses, a series of systemwide policies to help replace those losses and a set of salmon and steelhead research objectives.

The amendments will encompass proposals by the Montana Department of Fish, Wildlife, and Parks to counter the effects of operations at Hungry Horse and Libby dams on wildlife species in western Montana.

The Council will take final actions on the amendments next February.

Model Conservation Standards: Encouragement for Early Adopters

by Jim Nybo

With its new "Early Adopter" program, the Bonneville Power Administration is fulfilling a commitment made in January to the region's state, local and tribal governments. The brightest star in the model conservation standards support constellation, the program gives direct aid to governments adopting model standards-level codes, or to electrical utilities adopting legally enforceable utility service requirements.

In a letter to Bonneville Administrator Peter Johnson complimenting the agency on its timely and constructive action, Northwest Power Planning Council Chairman Robert Saxvik said, "By your actions, you have provided a first rate example of regional cooperation." Chairman Saxvik added the commitment of the Council to "assist in being an active and constructive force in enlisting adopters and helping make the program successful."

With the completion of the Council's 1985 review and amendment of the standards and the decision by the U.S. Ninth Circuit Court of Appeals affirming the Council's analytical method in developing them, regional attention is now turning to adopting the model conservation standards as codes or utility service requirements.

The early adopter program is just one part of a broad regional support network for governments, electrical utilities, and the shelter industry, as the region begins to implement the standards that call for energy efficiency in new electrically heated homes and commercial buildings.

Another important part of the support network is the Super Good Cents program for utilities. Super Good Cents is Bonneville's marketing program to promote adoption of the standards.

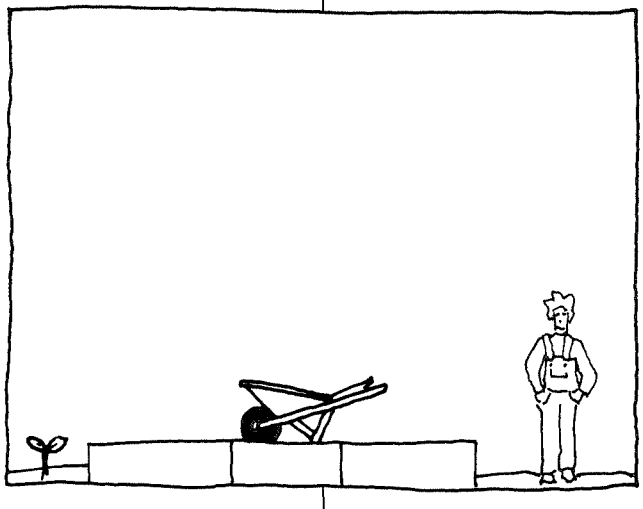
THE EARLY ADOPTER PROGRAM

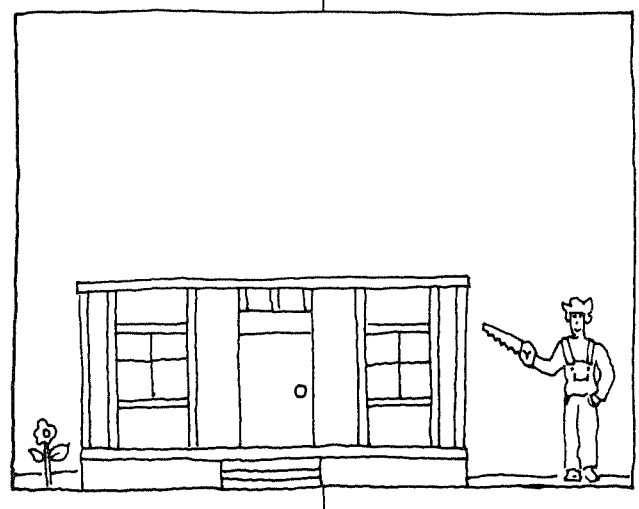
At a May 9 meeting with state, local, and tribal representatives from across the region, Bonneville Assistant Administrator for Conservation Steve Hickok and Residential Conservation Division Director Sydney Berwager described the features of the new early adopter program. It provides for local full-time staff with technical expertise; reimbursement for plan review, on-site inspection costs, and administration of the incentive program; training for code enforcement staff; and substantial builder payments.

Now that Bonneville has announced the main features of the program, the agency is preparing the formal program solicitation notice for participants, which is expected in early July.

Major features of the Early Adopter Program

- A one-time lump sum adoption and incidental start-up cost reimbursement of $8,000-$17,000, depending on the level of building activity.
- A one-time training allowance of $850 per enforcement official trained.
- Funding for countywide technical assistance ranging from $10,000 to $100,000 for the jurisdiction in the county best able to provide countywide assistance to all build-





ers. The funding level is based on the level of building activity. A county with 50-200 new housing starts a year would receive $50,000 per year in 1986 and 1987. This number declines in 1988 to a range of $8,000 to $80,000, with that same county receiving $40,000.

- Reimbursement for implementation and enforcement activity at a rate of $125 per single family residence in cities and $150 in counties. Different reimbursement levels apply to multifamily and commercial buildings.
- Builder incentive levels in climate zone I (western Washington and Oregon) are set at $3,200 per single family residence in 1986 and 1987, declining to $2,700 in 1988. Payments in climate zone II (Idaho and eastern Washington and Oregon) and climate zone III (Montana) are $3,800 in 1986 and 1987 and decline to $3,300 in 1988. There is a separate payment schedule for multifamily structures, while no payments are offered for commercial buildings. An additional $50 per building will be provided to the enforcing jurisdiction to cover the costs of administering the builder incentive program.

THE ENERGY CODE HOTLINE

When code officials around the region first began to learn about the model conservation standards, they asked for three things: a support system to answer their questions about the standards, actual codification of the energy standards into an enforceable building code document, and a published manual reflecting various building practices that are accepted means of building to the standards.

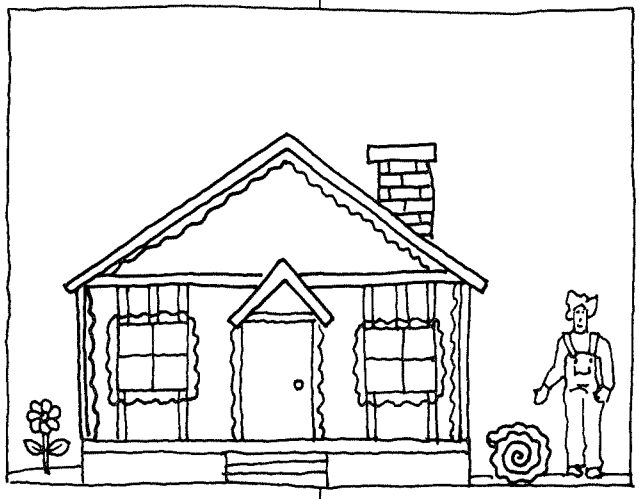
The principal mechanism for answering code official questions is the energy code hotline. Available only to code officials, the hotline began functioning in January and is operated by the International Conference of Building Officials (ICBO). There is a toll-free hotline number for each state. The hotline provides energy code interpretation and application information five days a week. The operators are experienced code officials.

The hotline includes energy product information and uses a specially developed data base. All code interpretation questions and answers are added to the data base, by state. Every two months the data base is printed out and distributed by ICBO to code officials throughout the region to be added to the Manual of Accepted Practices, mentioned below. Working out of ICBO's new regional office in Bellevue, Washington, the hotline operators have access to ICBO's extensive energy code library and video tape catalogue, as well as to specialists in the energy agencies of the four states.

PUBLISHED ENERGY CODES AND THE MANUAL OF ACCEPTED PRACTICES

The model conservation standards spell out energy saving features of buildings, but are not in themselves an energy code. They have been put into the format of an energy code, however. For those states where Chapter 53 of the Uniform Building Code is familiar (Oregon and parts of Idaho), the Council has published the "Model Conservation Standards Equivalent Code." For states that are familiar with the 1983 Model Energy Code of the Conference of American Building Officials (Washington, Montana, and parts of Idaho), Bonneville has published "Model Conservation Standards Equivalent Code Amendments to the Model Energy Code 1983."

Since it is up to the building official in each jurisdiction to interpret and apply the code, information sharing on how others are interpreting and applying the code and on various different building practices which are acceptable is important. This is being facilitated by Bonneville's support of a "Manual of Accepted Practices," a publication which provides this sort of communication.



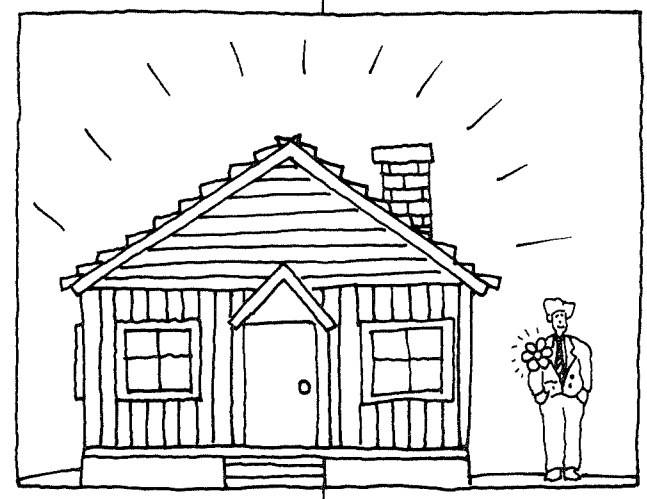


Illustration: Lynn Carson

STATE ENERGY OFFICES: INFORMATION, TRAINING AND TECHNICAL ASSISTANCE

For several years, each of the four state energy agencies has participated in a state and local government technical assistance program. In recent years, model conservation standards technical support has become a major feature of these programs. The states are now fully able to provide technical training on energy efficient building practices and numerous other support services. They provide the technical workshops for the Super Good Cents utility energy efficiency marketing program, and they may be the best place for local builders and local government officials to turn to have their questions answered. Local electrical utilities, especially those that offer the Super Good Cents program, are another excellent source of information and assistance.

The network of support described above is a cooperative one. Interested utility or local government officials, or builders can feel comfortable contacting a Bonneville local office, a state energy office, a local government association office, or the Northwest Power Planning Council for referrals for assistance. The Council's power plan identifies regional cooperation as the path to solving the Northwest's electrical energy problems. The region is following this course right now with the model conservation standards.

LEARNING FROM THE FIRST ADOPTERS

In 1984 and 1985 several jurisdictions in the State of Washington adopted model standards-level building codes, and one utility adopted a utility service requirement. Jurisdictions adopting codes include the City of Tacoma, Grays Harbor County, and the municipalities of Stanwood, Elma, McCleary, and Republic. Using its authority as an electrical utility, Tacoma City Light has adopted a utility service requirement which is enforced in the utility service area outside the incorporated city limits of Tacoma. Already there have been important dividends to the region from these early adopters.

The current adopters are, in a way, pioneers, providing a wealth of experience for the jurisdictions that will follow their lead. They have shown that it can be done. Based on accounts from adopting jurisdictions, it is working well. Code enforcement officials as well as builders and elected officials from adopting jurisdictions have been willing to pass on their experience to others. An on-site visit to a model standards building under construction or a conversation with a building official or an elected official can be very helpful to a jurisdiction considering adoption.

Notice of Filing of Petitions for Review

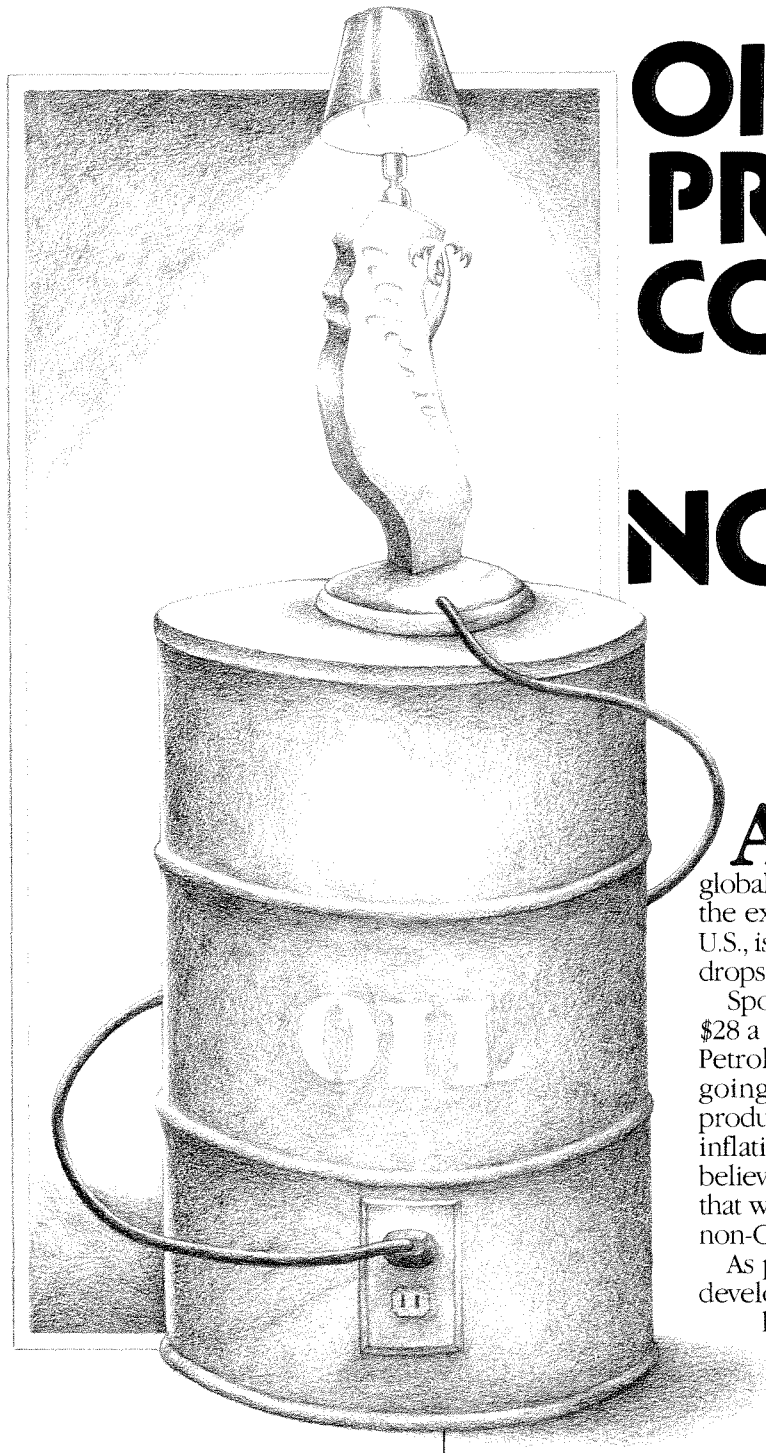
Three petitions for review of the Council's amended model conservation standards, adopted by the Council on December 4, 1985, (see 51 Federal Register 7364, March 3, 1986) have been filed in the United States Ninth Circuit Court of Appeals. The court has determined that notice of these petitions can best be given to interested persons by publication in *Northwest Energy News*.

Ninth Circuit case number 86-7243 was filed on April 30, 1986, by petitioners Seattle Master Builders Association, et al., against the Northwest Power Planning Council as respondent. Petitioners requested the court to review the amended standards adopted by the Council on December 4, 1985. The petition did not specify any particular aspects of the standards for which petitioners seek review. The petitioners' attorneys are John W. Hemplemann, Paul Sikora and Michael B. King of Diamond and Sylvester, 2600 Columbia Center, Seattle, Washington 98104 (206-623-1330). Any person desiring a copy of the petition should contact the above-named attorneys.

On May 1, 1986, a petition was filed by Case (an unincorporated association), the Utility Reform Project, et. al., as petitioners against the Northwest Power Planning Council as respondent in Ninth Circuit case number 86-7245. Petitioners requested that the court review and modify or set aside those portions of the amended model conservation standards dealing with new commercial buildings, existing residential buildings, direct service industry and governmental customers of the Bonneville Power Administration, utility conservation programs relating to existing residential buildings and industrial and irrigation customers of utilities, and model conservation standards for buildings converting to electric space conditioning. Petitioners did not challenge the Council's standards for new residential construction. Attorney for petitioners is Linda K. Williams, 2527 S.E. 17th Avenue, Portland, Oregon 97212 (503-239-7179). Any person requesting a copy of the petition should contact Williams.

On May 2, 1986, the Northwest Conservation Act Coalition and Natural Resources Defense Council as petitioners filed a petition for review against the Northwest Power Planning Council as respondent in Ninth Circuit case number 86-7247. The petition challenged the model conservation standards for conservation in new commercial buildings, standards governing the energy efficiency of buildings that convert to electric space conditioning, and standards for utility-financed incentives to conserve electricity in existing houses. The petition specifically declined to challenge the residential model conservation standards dealing with new single and multi-family housing or utility programs that address such housing. Attorney for petitioners is Ralph Cavanagh, Natural Resources Defense Council, 25 Kearny Street, San Francisco, California 94108 (415-421-6561). Any person requesting a copy of this petition should contact Cavanagh.

The statutory period for filing petitions for review of the amended model conservation standards ended on May 2, 1986. See 16 U.S.C. § 839f(e)(5).



OIL PRICE COLLAPSE... A NORTHWEST IMPACT?

by Dulcy Mahar

A relatively sudden and sizable shift in one of the world's major energy resources is bound to have global reverberations. The Northwest, though not affected to the extent of oil producing regions such as the Southwest U.S., is nevertheless feeling the repercussions from dramatic drops in world oil prices.

Spot market prices for crude oil have plummeted from $28 a barrel just last December—when the Organization of Petroleum Exporting Countries (OPEC) declared it was going after a bigger share of the market by boosting production—to $13 a barrel this spring. When adjusted for inflation, this is the lowest price since 1974. Most experts believe the OPEC strategy is to keep oil prices down to a level that will stimulate demand for oil and eliminate or weaken non-OPEC oil producers.

As part of its job to monitor electrical energy resource developments, the Northwest Power Planning Council staff has done a preliminary analysis of oil price impacts on the Northwest. Specifically, the Council staff has looked at impacts on the 1986 Northwest Power Plan and on Bonneville Power Administration revenues. Power Planning Director Jim Litchfield cautions that this is only a "sensitivity test," not a forecast of what actually will happen. "We looked at several 'what ifs' in the event oil prices stay low," he explains.

Lower oil prices will mean that California's oil-fired generation will be cheaper, and there will be less need to buy the Northwest's surplus electricity.

While there is a potential for substantial impacts, Terry Morlan, the Council's manager of demand forecasting, says it is too early to tell if the dramatic oil price drop is a temporary aberration or a long-term trend. He tends to believe that prices are likely to be cyclic, that is, both up and down over time.

A Council staff issue paper on the subject hypothesizes, "An oil price rebound would be plausible because lower oil prices carry the seeds of their own destruction. Lower prices will tend to increase the demand for oil and also to reduce the supply of oil ... The resulting market tightening will tend to increase the market share of the OPEC producers thus returning some of their market control that has been lost recently. This control, combined with the pain felt by OPEC economies from the current price collapse, could provide the conditions for larger price increases in the future." But Morlan is quick to point out that he isn't expecting a "quick rebound to something like last year's levels."

Illustration: Joan Barbour

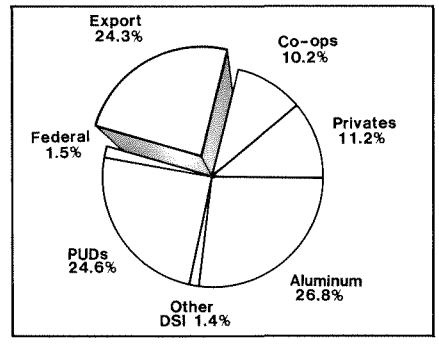
In view of this uncertainty over what will actually happen, Morlan and Litchfield do not see any reason to rewrite the power plan at this time. Litchfield notes, "The Council's power plan is a long-term plan, and it takes into account short-term fluctuations." In fact, the power plan anticipates a drop in oil prices between 1985 and 1990, for both the low and medium-low demand forecasts. In the low growth scenario, oil prices would drop (in real terms) to $13 a barrel by 1990.

If such low prices were sustained for some time, there would be what Morlan calls a "moderate" impact on the plan's medium-high scenario. This would mean that at the end of the 20-year planning period, demand for electricity would be 4 percent below what the plan's medium-high outlook now calls for. The average annual demand growth would drop from 1.8 percent to 1.6 percent in the medium-high forecast. "It's well within our forecast range," Morlan stresses.

"In the long run, the effects of lower oil prices are beneficial to the region, but there are some short-term effects that could be negative," he explains. Oil prices affect both the demand and supply side of electricity. They lower the demand for electricity, because they offer an attractive alternative in terms of cost.

This can have a positive impact on ratepayers, Litchfield explains. "There's a cost to electrical load growth. We have to add higher cost resources." With lower demand for electricity, the current surplus will last longer and the region will need fewer new resources. When it does need new resources, lower fuel prices for plants using fossil fuels will reduce the cost of generating electricity. As a result, the real price of electricity should drop. The sensitivity tests indicate a drop of around 2.6 mills, or 7 percent lower than in the power plan's medium-high forecast.

BPA Non-Exchange Revenues



The most serious impact of lowered oil prices will be on the Bonneville Power Administration. Currently, 24.3 percent of Bonneville's (non-exchange) revenues comes from marketing electricity outside the region—with California the principal buyer. Lower oil prices will mean that California's oil-fired generation will be cheaper, and there will be less need to buy the Northwest's surplus electricity, unless that surplus can compete in price.

As Bonneville revenues drop, either because it loses California sales or drops its secondary power rates to remain competitive, it may face the problem of meeting its fixed debt repayments to the federal treasury or raising its wholesale power rates. Ironically, as far as the Northwest is concerned, this rate impact could be canceled out by the lower rates caused by lower demand and lower power generation costs.

However, the two rate impacts would probably not occur at the same time. The impact on Bonneville would be more immediate, so that Northwest ratepayers would feel the pinch in the near future. Ratepayers would then see a reversal, with positive impacts, in the latter half of the 20-year planning period.

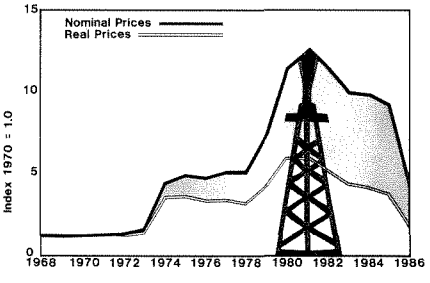
Changing electricity prices isn't the only possible impact of lower oil prices. The mix of resources used to produce electricity could also be affected. A resource is cost effective only in relation to another resource. If oil prices were to remain low for some time, they would affect other resources available to the Northwest. That could mean a change in the Council's resource portfolio. The portfolio is the section of the power plan that outlines the type, quantity and schedule for developing resources in order of cost effectiveness. As the price of one resource drops, the relative values of other resources change.

For example, the cost-effective level of combustion turbines that are oil or gas fired is very sensitive to oil price changes. Currently, the power plan anticipates that development of 700 megawatts of combustion turbines (to back up nonfirm hydropower) would be cost effective when the power is needed. However, continued low oil prices could mean that as much as 4,000 megawatts of combustion turbines would be cost effective. If this were to happen, this resource could replace a significant portion of the coal plants that would be needed if the Northwest were to experience high load growth. Nonetheless, Litchfield cautions, "changing the power plan to reflect a possibly temporary, low oil price would be like placing all our bets on nuclear power when oil prices are high. You reduce your ability to adapt to changing prices. You put too many eggs in one basket."

While Litchfield and Morlan reiterate the caveat that "it is just too soon to tell," they will continue to monitor oil prices, and they agree that, if extremely low oil prices seem here to stay, the plan will be reopened for public review.

"In the long run, the effects of lower oil prices are beneficial to the region, but there are some short-term effects that could be negative."

Historical World Oil Prices



The Life of a Salmon in the Columbia River Basin

by Ruth Curtis

The Columbia River Basin is home to one of the Northwest's most spectacular resources—the creatures known as anadromous fish, for the most part, salmon and steelhead. The basin is also "home" for the largest coordinated hydroelectric system in the world. Unfortunately these two resources have not always mixed well in the Northwest. Salmon and steelhead are complex creatures, needing to move freely up and down the river—something the dams have made very difficult.

Because the dams obstructed salmon and steelhead passage in the river, they have seriously damaged the fish populations of the basin. But while concern over the fish losses was shared by the four states and other jurisdictions involved in both the hydropower and fish and wildlife resources, a coordinated systemwide approach was needed to save the fisheries.

To provide that coordination, Congress approved the creation of the Northwest Power Planning Council in 1980 and charged it with developing a program to protect the fish from the hydroelectric system and to restore them as much as possible. The result of the planning process that pulled together all of the resource managers was the Columbia River Basin Fish and Wildlife Program.

This year, that program is being amended (see page 7). To provide background for this amendment process, the life cycle of salmon and steelhead, the effects of the hydroelectric system on that cycle, and the Council's efforts to reduce that damage are described below.

Hatching and early rearing

Fertilized eggs of salmon and steelhead incubate in the stream's gravel and hatch into larva, or alevin, which look like tiny fish with a yolk sac attached to their bellies. In time the young fish absorb the yolk sac and emerge from the gravel to forage for food. Called "fry" at this stage, they will stay in the stream for a short period (a few days to over a year depending on the species), then begin the trip to the ocean.

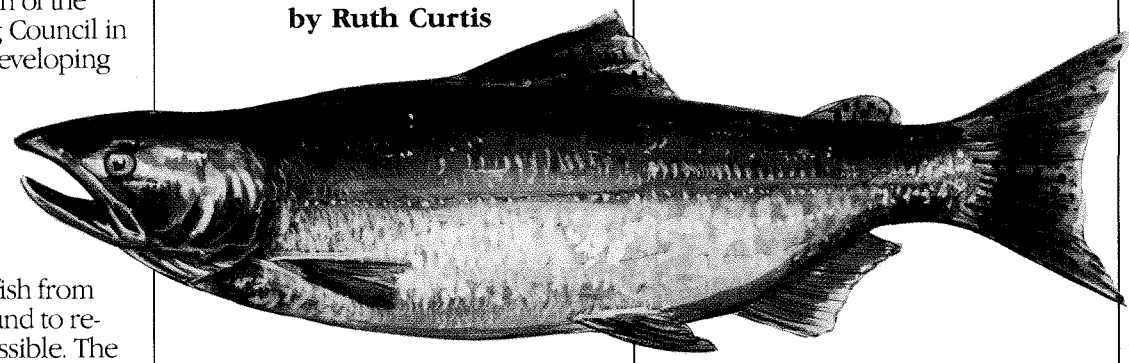


Illustration: Jerry Haworth

Downstream migration

When the fish are ready to migrate to the ocean, their bladder enlarges and their body shape alters. They become "smolt" and are preparing for life in salt water.

Traveling mostly at night and helped by the river's current, they journey downriver to the ocean. Before Grand Coulee Dam was built, blocking the upper reaches of the migration, many traveled over a thousand miles to reach the Pacific Ocean.

Problems and program measures

By storing the spring runoff in reservoirs, dams have altered the natural flows of the river system. This decreased flow, when smolt are migrating downriver, increased the time the journey takes, affecting the ability of the fish to make the transition to saltwater and increasing their susceptibility to disease and predators.

The Council's program has established the water budget—a block of water used in the spring to "flush" the fish down the river, imitating the spring runoff. It is coordinated by representatives of the fish and wildlife agencies and Indian tribes, and the dam operators and power interests.

The dams themselves are deadly to the young fish. They are frequently injured or killed by turbine blades and the extreme pressure changes experienced passing through the turbine units.

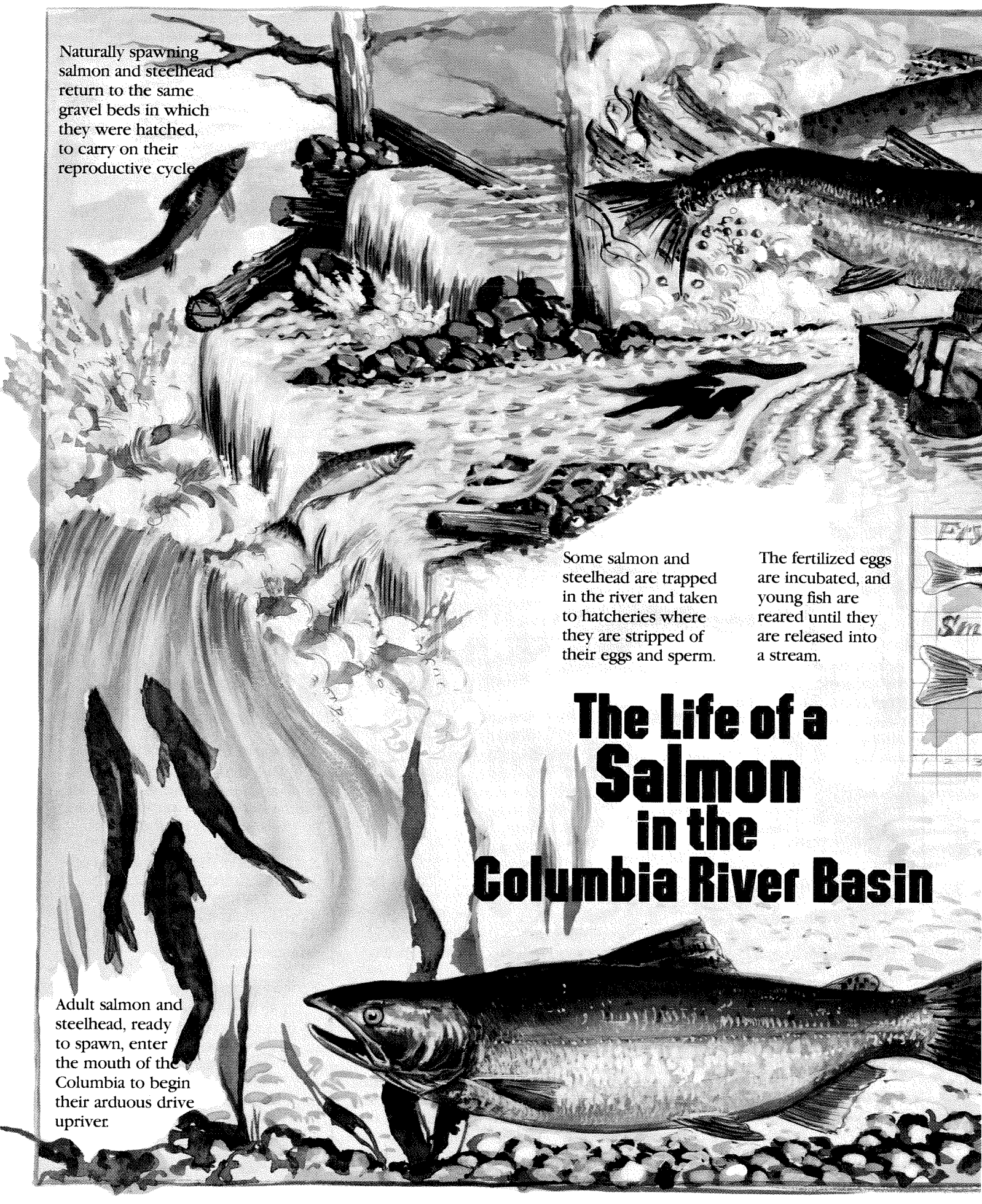
The Council has called for permanent bypass systems for each dam on the mainstem Columbia and Snake rivers. These provide a route for fish to move past the dam without entering the turbine units. Until these permanent systems are in place, the Council has called for "spill"—releasing fish-laden waters out the spillways, bypassing the turbines—at dams with low fish survival rates.

Maturing in the ocean

In the ocean, most of the fish turn north and head for the Gulf of Alaska where they scatter over their feeding grounds. They start in the ocean as plankton feeders and, as jaws and teeth develop, they progress to such food as shrimp, herrings, and anchovies. As they reach maturity they move to the coastal waters of the Northwest, seeking out the river they originated in.

Problems and program measures

While the hydroelectric system has no direct effect on fish when they are in the ocean, the health of the ocean fishery is necessary to protect investments being made in improving populations in the basin. The Council is working with harvest management agencies to ensure enough fish survive to return to the Columbia River Basin.



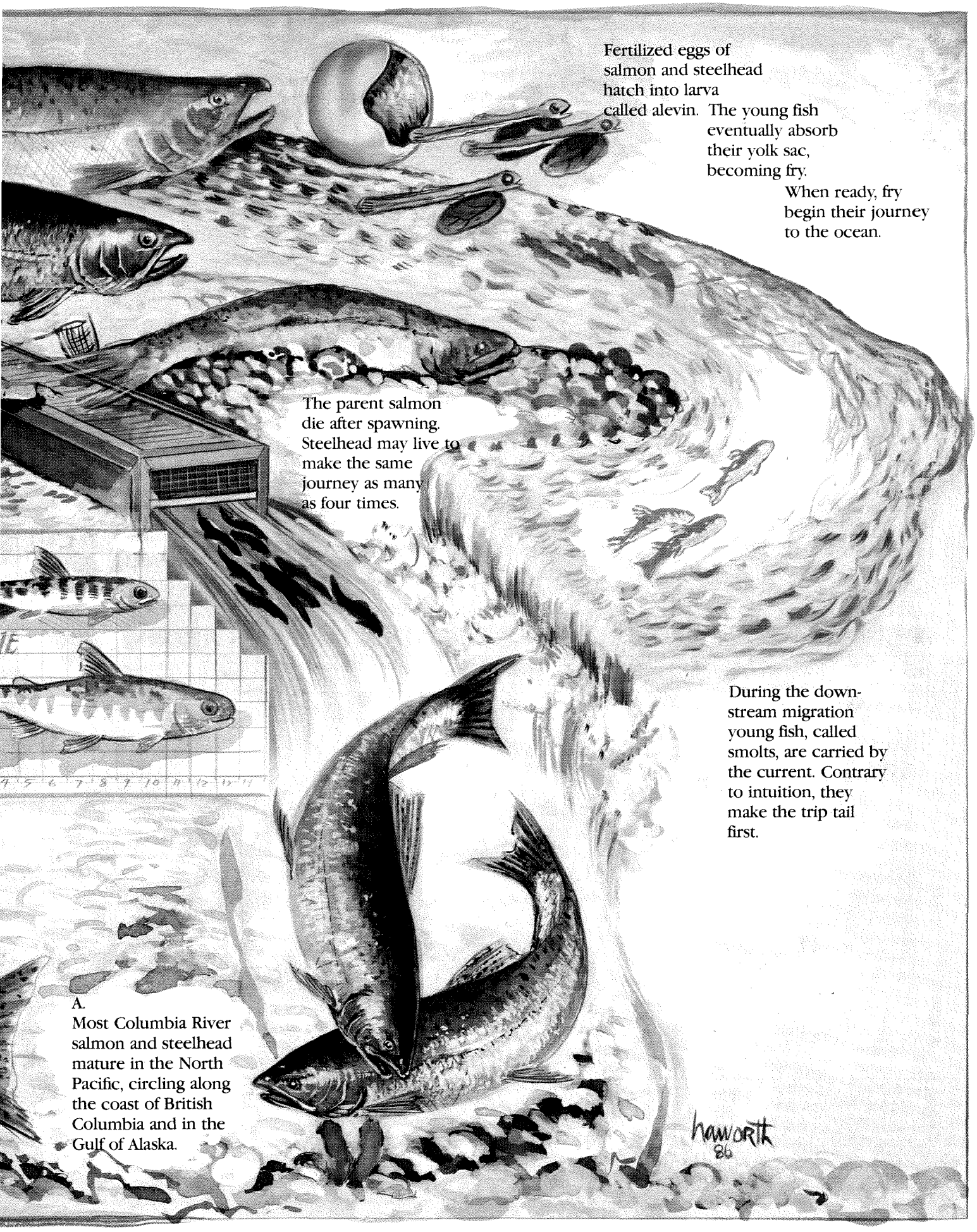
Naturally spawning salmon and steelhead return to the same gravel beds in which they were hatched, to carry on their reproductive cycle.

Some salmon and steelhead are trapped in the river and taken to hatcheries where they are stripped of their eggs and sperm.

The fertilized eggs are incubated, and young fish are reared until they are released into a stream.

The Life of a Salmon in the Columbia River Basin

Adult salmon and steelhead, ready to spawn, enter the mouth of the Columbia to begin their arduous drive upriver.


Fertilized eggs of salmon and steelhead hatch into larva called alevin. The young fish eventually absorb their yolk sac, becoming fry.
When ready, fry begin their journey to the ocean.
The parent salmon die after spawning. Steelhead may live to make the same journey as many as four times.
During the downstream migration young fish, called smolts, are carried by the current. Contrary to intuition, they make the trip tail first.
A.
Most Columbia River salmon and steelhead mature in the North Pacific, circling along the coast of British Columbia and in the Gulf of Alaska.
haworth
86

Upstream migration

Now begins the salmon's final journey. Starting in prime condition, they charge up the river, not even taking time to feed as they head for that particular stretch of streambed where they hatched.

Problems and program measures

Dams are a physical barrier to fish struggling to return upriver. To solve the problem, all but a few dams have fishways or ladders the fish negotiate to pass the dam. Hells Canyon Dam on the Snake River, Chief Joseph and Grand Coulee Dams on the Columbia, and Dworshak Dam on the North Fork of the Clearwater River do not have fishways and have permanently blocked salmon and steelhead from areas above them.

At some dams the fishways are inadequate or inefficient due to lack of flows to attract fish, mechanical failures of pumps, as well as other reasons. The Council's program calls for improving adult passage conditions by improving the operation and maintenance of the fishways and studying and developing flow and spill criteria for the dams.

Propagation (spawning)

Natural propagation

Once the adult salmon return to the stream where they were hatched, they begin to pair off. The female digs a redd (nest) in the gravel shallows by overturning the stones with her tail, while several males establish territorial dominance to protect her. When the female is ready to mate, eggs and sperm are released simultaneously into the redd. The female then covers the eggs with gravel. After mating, all Pacific salmon die; scavenging birds and animals will feed on their carcases. Steelhead do not necessarily die and have been known to make up to four spawning migrations.

Problems and program measures

Reservoirs created by the dams have flooded nearly all the spawning habitat on the Snake and Columbia rivers. Even in the two remaining freeflowing areas, the water level now fluctuates so much that many of the areas are unsuitable for spawning.

Fortunately the basin has many tributary streams with a great deal of potential habitat. Much of this habitat is not fully used by the fish, either because streams are blocked or it needs restoration. The Council's program is recommending the removal of obstructions, and other habitat improvements.

Hatchery propagation

On their way up the river, some adult salmon are captured and taken to a hatchery facility. There eggs and sperm are stripped from the fish, fertilized eggs incubated, and young fish reared until they are released into a stream.

Problems and program measures

Hatcheries have proved successful in supplementing dwindling runs of naturally spawned fish in the basin. However, there is mounting concern that the genetic health and resilience of the fish populations is being lost. One of the Council's primary goals is to restore wild and natural propagation of salmon and steelhead in the basin. The program puts an emphasis on the coordinated use of hatcheries as a crucial link in this restoration.

GENERAL LIFE HISTORY CHARACTERISTICS OF COLUMBIA RIVER SALMON AND STEELHEAD.

Species	Adult Migration Times	Spawning Time	Downstream Migration	Location of Spawning
Spring chinook	Jan-May	Late July to late Sept	During 2nd spring/summer	Tributaries to mainstem
Summer chinook	June-mid-August	Sept-mid-Nov	During 2nd spring	Tributaries
Fall chinook	Aug-Dec	Sept-Jan	April-Sept (before they are a year old)	Mainstem Hanford Reach
Coho	Early Oct -late Dec	Mid-Nov -early Jan	March-July (after their first year)	Tributaries-backwater areas
Sockeye	Early run-late July to early Aug; Late run Sept-Oct	Aug-Nov	April-June	Tributaries above lakes; fry then enter lakes & remain 1-3 yrs before migrating to ocean
Steelhead Summer run				
"A" group (earlier run)	June-early Aug	Feb-March	March-June	Tributaries
"B" group (later run)	Aug-Oct	April-May	March-June	Tributaries
Winter run	Nov-mid-June	Feb-June	March-June	Tributaries

Adapted from Bell, M.C., 1984, *Fisheries Handbook of Engineering Requirements and Biological Criteria*, U.S. Army Corps of Engineers, North Pacific Division, Portland, Oregon.

Suggested reading for more information:

Childerhose, R.J. and Marj Trim, 1981, *Pacific Salmon*, University of Washington Press, Seattle, Washington, 158 pp.

Netboy, Anthony, 1980, *The Columbia River Salmon and steelhead Trout: Their Fight for Survival*, University of Washington Press, Seattle, Washington, 180 pp.

Northwest Power Planning Council, 1984, *Columbia River Basin Fish and Wildlife Program*, Northwest Power Planning Council, Portland, Oregon, 138 pp.

THE GOALS PROCESS UPDATE

by Ruth Curtis

Since February 1985, the Northwest Power Planning Council has been involved in assessing salmon and steelhead losses in the Columbia River Basin and in developing a program framework to address those losses.

This process is designed to define the scope of the Council's Columbia River Basin Fish and Wildlife Program. The process addresses such issues as the extent of the salmon and steelhead losses, the limit to which electricity ratepayers should be expected to restore these fish populations, and how this investment can be most effective.

Below is a summary of the current activities in this process.

Hydropower responsibility

Salmon and steelhead annual runs in the Columbia River Basin have declined by 5 to 11 million fish as a result of the development and operation of 136 hydroelectric projects, according to a Council staff issue paper. This paper has been circulated for public comment. (For more information, see the related story on page 24.)

Salmon and steelhead planning

Having made a preliminary decision on the hydroelectric system's responsibility for the declining runs, the Council is now interested in comment on a staff paper about coordinating salmon and steelhead planning.

According to the staff paper, restoration efforts in fish production (i.e., artificial and natural production), harvest and mainstem passage must be coordinated to be effective. Each of these efforts is important to restoring the fish, and a lack of coordination decreases the value of the ratepayer's investment. The paper describes the Council's planning process through the rest of the year and seeks comments on a number of technical issues including genetics and the system-wide planning model. Public comment on the paper is being taken through July.

Work began on these approaches this past winter when the Council sponsored a series of workshops for Columbia River Basin salmon and steelhead experts. In the workshops, experts discussed alternative strategies for producing fish in the basins's subbasins. As part of the workshop process, a computer model of salmon and steelhead life cycles and a process for assessing genetic concerns were developed. Technical reports describing these products are included in the staff planning paper.

The computer model of the fish life cycles is designed to facilitate a basin-wide approach to salmon and steelhead planning. The model can help identify various biological interactions and other critical factors that affect salmon and steelhead production. The Council's staff will demonstrate the model to fisheries managers and other interested parties and get their suggestions for improving it in a series of workshops to be held throughout the region in July.

Salmon and steelhead research

The Council is also studying research priorities for the salmon and steelhead portions of its program. An issue paper, released in June, discusses what the guiding principles of that program should be and how it should complement other restoration work in the basin.

The Council is concerned that the existing approach to research in the basin may leave major gaps in our understanding of how the watershed and its salmon and steelhead interact. Furthermore, research findings may not be incorporated into policy and project decisions. It is hoped that the discussion generated by the issue paper will produce solutions to both of these problems.

Salmon and steelhead policies

All of this work is expected to culminate this fall with a staff issue paper summarizing modeling results and stating major choices for setting coordinated passage, harvest and production policies in the basin.

(To receive copies of the documents mentioned here use the order form on the back cover.)

Illustration by Dennis Cunningham

INTERVIEW:

MERRILL SCHULTZ

by Dulcy Mahar

He calls himself a Bonneville brat. Merrill Schultz, executive director of the Intercompany Pool—an association of investor-owned utilities—grew up in the power business. His father, chief engineer of the Bonneville Power Administration from 1939 to 1954, was one of the original staff appointments made shortly after the agency opened.

Schultz grew up in Portland and went to the University of Washington, where he graduated with a bachelor of science degree in electrical engineering. From there he went to Westinghouse Electric in Pittsburgh, Pennsylvania for three years, only to return like a homing pigeon to Bonneville, where he worked the next six years.

His "big break" came in 1962 when, despite his youth, he was named a negotiator for Bonneville in the Pacific Northwest Coordination Agreement. (That agreement among all owners of hydropower projects on the Columbia system governs seasonal releases of stored water for maximum power generation.)

In 1967, he went to the Northwest Power Pool, a utility coordinating group, where, as he puts it, his claim to fame was that he

Illustration: Lynn Carson

was one of the few who knew what to do with the industry's relatively new computers. He adapted power supply planning problems to computers and wrote the power pool's computer program, used to manage the coordination agreement.

In 1974, he became director of the Northwest Power Pool, which, at that time, had what is now the Pacific Northwest Utilities Conference Committee's (PNUCC) position as the voice of utilities, since PNUCC had no central staff. PNUCC assigned him to be the industry spokesman during the region's 1977 drought. As such, he was the liaison to the region's governors during the crisis when power curtailment plans were developed.

In 1980, he became director of the Intercompany Pool, an organization created in 1947 to coordinate the power operations of the region's investor-owned utilities. The organization is based in Spokane, Washington.

Q. What do you feel are the strong points of the Council's new power plan and, conversely, its weak points?

The strong points are, in general, the same strong points I found with the first plan. In the main, it is a professional, industry-like—maybe that puts the kiss of death on it—analysis of cost effectiveness. I've been pleased with the Council's planning effort in the sense that it is a conventional sort of utility analysis. It is the kind of analysis utilities should be making of cost effectiveness in the region. Its strengths are that it relies on satisfying the kinds of responsibilities we feel utilities have toward their customers, in its techniques and in its outlook. In terms of actual details, I don't find anything terribly remiss with it.

Q. In the past, you've made some reference to the Council's responsibilities and expressed the opinion that the Council occasionally strays from those responsibilities. Could you elaborate?

Our biggest problem with the plans and with the Council, on occasion, is a tendency to go for pie in the sky. This seems to reflect a lack of realization that they are responsible to put something real, something practical together. This is a concern of mine, but it is not a criticism of the fundamentals of the plan. To the contrary, the fundamentals of the plan have been done in a conventional and practical way.

This relates to one of my concerns with the approach the Bonneville Power Administration took in its recent resource strategy process. We have an [Northwest Power] Act; we have a Council, which, at least for the moment, is constitutional; and, in establishing the Act, we put ourselves in a dependent position on the Council's ability to plan.

To the extent the Council's responsibility is diluted by Bonneville doing its thing independently, the Council will have no incentive to be practical—or at least a much lessened incentive to be practical. If Bonneville asserts its own independence more and more, we will see more and more pie in the sky in the Council's activities, precisely because the Council will not be held accountable for the stuff that actually may show up on the system.

One of our great concerns when the Act was passed and one of the reasons the ICP pushed for the development of the System Analysis Model [one of the computer programs the Council uses in developing the power plan] was our concern that the Council would go flying off into space with windmills and solar cells and all sorts of novel devices whose chief virtue is sex appeal, rather than meeting customer load. To a very great extent, that concern has been put to rest.

I continue to have great respect for the Council's power planning staff and the approach they have taken to this effort. Here and there, there are still flashes of what I could consider unreality.

To the extent the Council's responsibility is diluted by Bonneville doing its thing independently, the Council will have no incentive to be practical.

Q. You mentioned your concerns with the Bonneville Power Administration's resource strategy. This is a subject that you have spoken about in fairly strong terms recently. Could you reiterate your key points?

There are several key points. Foremost was what I considered to be a fundamental lack of concern for the intent of the Act in making the Council's plan the fundamental vehicle for the region's energy future. It appeared that instead of

starting with the plan, and looking at it to see how it fit Bonneville's needs and objectives, Bonneville started from scratch on a totally independent course of evaluation and analysis. My major point was that I thought the proper role for Bonneville was to have spent this time, this effort, and this brainpower in assisting the Council.

By assist, I don't just mean hewing wood and carrying water, but setting the Council straight, when necessary, in putting together a plan that would amount to something of a consensus. Bonneville appeared to take off on its own course, doing its own load forecast, inventing its own analytical tools, examining its own options and using its own cost-effectiveness criteria. To me this is both dangerous and, I thought, a long way from what the Act intended and what it requires.

I am also very concerned that Bonneville developed its own computer model from scratch. Their new model was obviously inadequate to the task and it was different from the Council staff's model which we understood and, in fact, contributed to in some fairly major areas, and which we could check results on. That was a great waste of effort in that the Council staff had, starting with the day after the first power plan was published, embarked on a very deliberate course of building its own decision model and inviting assistance.

But, Bonneville's approach was backwards with respect to the Act, which essentially requires that the Council be the planner and Bonneville the implementer.

Bonneville's approach was backwards with respect to the Act, which essentially requires that the Council be the planner and Bonneville the implementer.

Q. You said that the Council occasionally has "flashes" of unreality. What are some specific examples?

One of the good examples that we've been wrestling with, and Senator [Dan] Evans even managed to refer to it in his talk, looking me right in the eyeballs, is the matter of combustion turbines. One of the things we're concerned about is the Council's overly sanguine treatment of our ability to construct and operate facilities that are, on the face of it, not permitted by federal law.

Another example, and one of the concerns we have right now, is the so-called West Coast Energy Study. We are concerned there will be assumptions that we can rely on energy from outside the Northwest as a way of avoiding making commitments inside the Northwest. If the opportunities are real, we will support them. Our concern so far has been that they are not as real as some people seem to think they are, based on past experience.

Q. I wanted to ask you what future you saw for nonfirm power; you've already touched on combustion turbines.

First of all, I'm a linguistic purist and I don't like a lot of verbiage. There were some on the Council who liked to reduce power planning to slogans. Firming of secondary or nonfirm power, as used in the plan, is largely a misnomer. The only way one firms secondary is by building reservoirs or by making arrangements that have the same effect as reservoirs—that is, places to store nonfirm energy and get it back on a guaranteed basis. That doesn't fit a lot of the implementation devices which have been described under that general heading.

I think there is a real place for such devices as combustion turbines. I think there is a real place for exchanges with extra-regional utilities. I also think there are some cautions that must go with those optimistic viewpoints. I think and I hope the Council and the staff are well aware of these cautions.

We do have a problem of feasibility in terms of the Fuel Use Act and other constraints on the use of some of those facilities. We do have a real concern with year-to-year rate swings that might result from dependence on high fuel cost resources. We have concerns with the fuel transportation and storage problems associated with resources that are operated intensively but infrequently. We are not advocating that such resources not be considered, but only that our concerns be addressed realistically. Our criticisms have been that the Council has not paid sufficient attention to these problems in some of its past efforts.

Q. There has been some analysis that lower oil prices will make these resources more cost effective. What are your feelings about the implications for the Northwest?

There are some people who believe the more numbers you write and the more computer programs you run the closer to God's truth you get. I am not one of those people. In my mind, the fluctuations of oil and gas prices which we've seen over the last 15 years have been only tangentially related to real economic market conditions. The price rise and fall has been mostly related to political or institutional factors which can't be very well forecast. What we are seeing is that one-by-one the things we thought we could depend on for planning are being taken away from us.

Loads have behaved in a way which obviously we didn't expect; the costs of generating facilities have shot up, stabilized, moved around. The costs of fuel of all sorts have gone all over the map. I have a real concern as to whether planning per se adds very much knowledge to what is basically a random situation—what is called, in technical terms, a drunk walk.

In face of that, the notion of depending on fairly inexpensive, short lead time facilities, even with their penalty of high production costs, is probably a smart thing to do. We don't know where we're going right now, and I don't think that beating the insides out of our computers is going to help a lot. The notion of devices such as combustion turbines, which have short lead times and relatively low capital requirements, is looking more and more like an attractive strategy.

I have a real concern as to whether planning per se adds very much knowledge to what is basically a random situation—what is called, in technical terms, a drunk walk.

Q. If planning is not very productive now—and the theme of being practical is something you reference—what would be practical now? How should we be using our time?

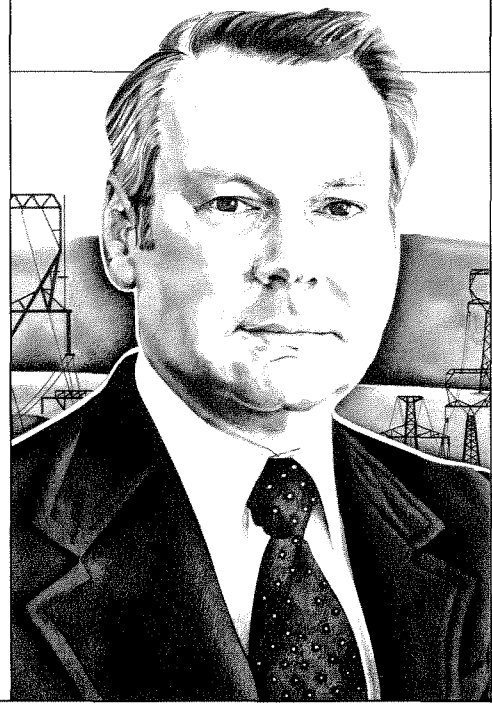
I think ways should be found to base our future on the ability to acquire and operate such facilities as combustion turbines—at least to the point that we might find this feasible or not. We don't know right now what would be needed.

Let's suppose we want to maintain the potential for 2,000 megawatts of combustion turbines. We need to get deeper into requirements for those facilities than the Council staff has done. We need to know where they might be located, how we get fuel to them, how much fuel storage (if they're oil fired) would be required. Let's start addressing modifications, if necessary, in the Fuel Use Act to make it possible to do those things.

I have never said that I thought those were uneconomical resources. What I have said is that the Council's analysis of them has been fairly shallow and has not answered some of the major concerns. If those concerns can be answered, let's go for it.

Planning does not consist of tearing a page of print-out off the machine and putting it in the power plan. Planning should consist of, in the Council's case, eight people with good judgment looking at these results and saying how does this computer stuff help us to make good judgments? Planning is a judgmental process, not a matter of writing a prescription on a computer printer and taking it to the resource store to be filled out.

The future of 4,000 megawatts of [direct service industry] load in the region is still very uncertain despite all the inducements provided by the variable rate, the incentive rate, Con Mod, God knows what else. The basic economy of the region is still a big question mark. Some of these things may come clearer in the future, but right now appears to be a bad time to be making any kind of serious capital commitment if the possibility exists of responding more quickly through combustion turbines.



I don't really have much patience with the discussion of whether we should be looking at 1,000 or 2,000 megawatts of combustion turbines. I don't think that's important. I believe in mixes; I believe in hedging bets; I believe in spreading eggs among several baskets.

I see nothing wrong, for example, with working diligently to try to make it possible to install a significant number of combustion turbines, while at the same time paying the preservation costs of WNP-1 and 3 and maybe even keeping the Creston [coal] plant buildable. To me this is the virtue of the very option scheme which the Council itself claims to have invented. I think they should take it more seriously than apparently they have—in terms of a mix. We want to keep a lot of options open at this point.

Q. After what you said about being a linguistic purist, I don't know quite how to ask you about the regional cooperation theme in the Council's plan. It's certainly a term that's flown under several flags, starting out with "institutional roles." Is this an idea you consider a "pie in the sky" thing or is there a practical future for it?

I don't know. Let me say I'm persuaded that there are some people who are unhappy with the agreement they made in 1980 [the Northwest Power Act]. Virtually everybody's unhappy, but some

less than others. The Act provided a structure by which Bonneville would serve as the spreader of risk and the regionalizer of cost for meeting load growth in this region. The price that some of us had to pay for our being able to depend on Bonneville in that role was the rate pool structure in which the public agencies demanded to be accorded priority to the federal base system.

In so doing, public preference was essentially changed from a supply priority to a price priority. The deal was struck. The parties made their trade-offs. There seems to be a lot of feeling that certain entities in the region, that is the public agencies, have some sort of divine right to a price advantage. As I see it, they have a right to what was provided by the Act. The Act provided a mechanism by which the cost-effective development of the federal system would be allocated. We have no axe to grind on that. We realize that the Act relegated the investor-owned utilities to a last-place position, but not nickel by nickel.

The public agencies demanded as their price for permitting the Act to proceed that they have the first right to the federal base system, including those resources under construction when the Act was passed. We acceded to that. To my way of thinking, that was the arrangement that was made, and we're prepared to live with it. The publics now complain loudly that

The basic economy of the region is still a big question mark.

the options concept, the preservation of WNP-1 and 3, and any number of other things are unfairly visited upon them, and I just can't agree with that.

We are prepared to cooperate regionally if the cooperation is better for us than independence. We are not claiming that it has to be better for us than it has to be for somebody else; it just has to be better for us than an independent future. We are prepared to proceed with the Act as it is written. We pay upwards of 8 mills more for power than the public agencies do. Until those two rates are equal, I'll have a hard time sympathizing with their complaint.

I made a suggestion, some time back, in response to your staff issue paper (then called institutional roles). I did it semi-facetiously, only because I knew it would be greeted with horror and shock by everybody, but I meant it seriously. I suggested that one answer to the problem of regional cooperation would be amending the Act to go to a single rate pool.

I don't see that as being a windfall for us. We're certainly not going to put a demand on Bonneville until we need power. We're not going to buy power to become more surplus than we already are, but a single rate pool would accomplish the purposes of the Act, far greater than the current language, in that it would spread risks and cost over everybody and would simplify things in the process. As it stands now, any resource that is proposed is immediately taken off to the individual lairs and examined by each customer class to see what its impact is on that customer class. I think it's a destructive situation.

Let me say one thing further about the cost of conservation and the way the Act treated conservation. I've been a little bit puzzled by these Johnny Come Latelies to conservation demanding all sorts of performance from the investor-owned utilities. It's like my grandfather who "discovered" America in 1898. There were already a few people here. Since 1973 the private utilities have clearly understood what marginal cost means. We're the ones who were facing the enormous marginal cost of new resources on our own. The publics weren't.

The pioneering work in conservation in this region was done independently by the private utilities. The Pacific Power & Light no-interest loan scheme, for example, was a national model. We were into conservation before anybody in the public agency arena or even Bonneville had any real experience with it. There are a few exceptions; I think Seattle City Light was pretty active as well.

The reason the publics weren't there is that the public power cost is Bonneville's average cost; they don't see marginal cost. They had no reason to consider it economically, because they weren't seeing the true marginal costs in the region. We were. We know what it was like. It wasn't because of any great patriotism or disproportionate amount of virtue on our side, but we were seeing what it cost to add a kilowatt to the system.

The Act, as I see it, was an attempt to force the public agencies to get into the conservation game, a game we've been playing for a number of years and continue to play. We believe in conservation. We said, and we'll say it again, we will meet or exceed any conservation program that is established in the region, and we'll either do it with a contract from Bonneville, or we'll do it independently, but it will be done. The impression seems to be that if we don't sign conservation contracts with Bonneville, we're not doing conservation. That's just flat wrong.

Q. What do you think the Council's priorities should be now?

That's tough. One thing I think is obvious, I don't want to see the Council drawing lines in the sand and putting batteries on their shoulders or chips or whatever as part of a game of king of the hill. I would like to see the Council develop an orderly procedure for planning—I guess you'd call it capability building—but a procedure that is a continuum in which things are updated, looked at routinely in a manner that flows rather than as a series of monuments. System planning is not something you can do every two years and start over again. I would

like to see a mindset and a procedure developed by which plans are routinely updated and changes are incorporated in an evolutionary rather than a revolutionary process.

It may not have the pizzaz of building a new edifice every two years, but I think the Council should take advantage of the fact that there is no major resource commitment called for now to improve techniques, to do the model building and, more or less, to maintain the ability to revisit issues on a fairly continuous basis. There just isn't that much to plan right now, but I think the options should be maintained, and that's one of them. We should maintain the ability to provide direction when it's needed; it may never be, but on the other hand it might.

The Act was an attempt to force the public agencies to get into the conservation game, a game we've been playing for a number of years and continue to play.

Q. What are your thoughts on the Council's fish and wildlife work?

My experience in the last several years has been that the fish and wildlife side of the Council has tended to take an advocacy position rather than a judgment position. I say this without, in any way, trying to shirk our responsibilities in the fish and wildlife area. We see people using this process to build bureaucratic empires and making this at least as important as helping fish and gaining the support of the Council.

The Act provides for enhancement and mitigation—or whatever those magic words are—of fish and wildlife, but it also provided a source of funding for some rather impoverished agencies. I'm nervous about yet another set of people with imperial tendencies, which we all have, using the Act to further their own goals, beyond protection of fish and wildlife. It appears to me that the Council and staff occasionally give in to this desire, when they should be much more skeptical.

One thing I'd like to make clear is that the Act assigns us a responsibility. I think we've played an honorable role in responding to that requirement. We accepted the water budget—which is a hugely expensive proposition for our ratepayers—very gracefully and in a very constructive way. We've accepted requirements to spill and to pay bucks for facilities as gracefully as we could, within our own responsibility to provide a low-cost power supply. I don't think we should be characterized as being so self serving as to be blindly against every measure being discussed. The thing that concerns me about the Council and staff is the different standards the two sides of the house operate under, even the different standard the Council seems to apply to its approaches to the two areas.

Q. Can you give some examples?

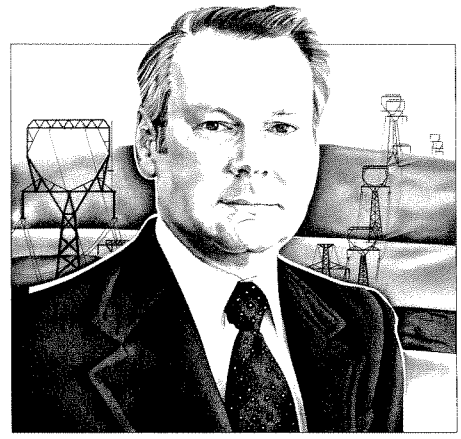
How far does one go, and what is the result in terms of fish? It isn't that you haven't provided justification against a well-defined power loss; you haven't even told us it's justified in terms of fish, let alone power. That's the sort of thing we're concerned about. We know it's going to cost us money, but there seems to be a much looser standard on the fish side.

I want the Council to work. I think my efforts have been constructive—to hold the Council's feet to the fire when I thought the Council went astray, to help the Council where I could and whenever help was invited.

I think the Council, in its success, doesn't have to agree with the conclusions in the industry; it merely has to pay attention to those things we consider important. This is the situation with combustion turbines, and I think the situation is similar with respect to fish. It is not that the Council is making decisions that will cost the power system money; it's that the Council seems to be, in many cases, making decisions based on other than what we consider an objective standard or analysis. It's not that the industry requires the Council to submit to our position in its decisions, but that the process and the attitude be the right form.

One of the things that's bothered me over the years is that there hasn't been good regional planning. I really look at the Council's providing good planning in the region as something that didn't exist before. If that's a reflection on Bonneville, so be it. If there's a need for any planning, then the Council is a very important instrument.

I want the Council to succeed. I want the Council to be good. And I want the staff lean and mean and confident. I think the region would lose a lot if the Council were to lose its place as the primary planner for the region. My disputes with the Council have been conducted in this vein. Just being helpful!



ASSIGNABLE LOSSES:
Hydropower's Responsibility

by Carlotta Collette

There is no question that the Columbia River Basin fishery was once one of the most productive in the world. There is no question, either, that, in only a century, the numbers of salmon and steelhead caught in the basin dropped precipitously. Fish cannery operations disappeared, tribal fisheries were reduced to barely enough to supply the salmon for Indian ceremonies and angling seasons were cut to next to nothing.

There are plenty of reasons for the losses. The incredible commercial harvest alone severely cut into the runs. But theorists and biologists argue that the fish could have recovered their earlier numbers had the great dams not been built on the river. Without the dams, they contend, harvest could have been regulated, habitat restored and hatcheries could have brought the big fish back in familiar quantities. But some of the dams were permanent obstacles to the runs. And it is the presence of the dams that brought the U.S. Congress to the point of legislating for the repair of the fisheries.

In the spring of 1985, the Northwest Power Planning Council embarked on a study to develop a framework for this ambitious project. In the fall, the Council released its assessment of salmon and steelhead losses. Now, those losses have been considered from the perspective of hydropower's contribution and, thus, the scope of Northwest ratepayers' responsibility for the restoration.

The Council staff's losses statement indicated that, since development in the basin began, the number of salmon and steelhead declined by between 7 and 14 million fish. This decline, the statement added, was partly attributable to a loss of nearly one-third of the salmon and steelhead habitat due to blockage by the big dams.

Of this total loss from all causes, the Council staff estimated in an issue paper released in April, between 5 and 11 million salmon and steelhead were lost because of the development and operation of hydroelectric facilities in the Columbia River Basin. The staff suggested this number as a cap for the ratepayer-funded restoration of the fish runs. They noted, however, that damage to the existing ecosystem may limit the restoration to a level far less than that.

The 5 to 11 million range is not more precise, because a reliable single figure would be virtually impossible to calculate. The information from which such calculations could be derived is spotty, with gaps in historical records and questions over the certainty of some of the information that is available. Besides, data-based calculations can rarely handle the complexities of the biological, cultural, hydrological, power and institutional systems that must be considered in the Columbia Basin.

Most of the comment received on this topic agreed that the losses due to hydropower fit within the Council's estimated range.

Shorts

A new fish ladder on the West Fork of Hood River has won national recognition for design excellence. The ladder is made up of a series of steps that span the 70-foot wide river. It will aid steelhead in their assent of a waterfall that had recently appeared as the river ate through bedrock to a softer underlayer. The ladder was designed by a Beaverton, Oregon engineering firm, Rittenhouse-Zieman Associates, and by the Oregon Department of Fish and Wildlife. It was funded by the Bonneville Power Administration as part of habitat improvements called for in the Northwest Power Planning Council's fish and wildlife program.

Conservation alone can cut Northern California's electricity use almost in half without any reduction in comfort levels, states a Pacific Gas and Electric Company study of potential residential electric power savings. The analysis, conducted by the American Council for an Energy-Efficient Economy, concludes that 44 percent of the electrical power consumption in the Northern California service area can be saved by the year 2005, with a "high penetration of both currently available and advanced technologies." The biggest energy savers will be new refrigerators and freezers, according to the study. Copies of the study, Residential Conservation Power Plant Study: Phase I—Technical Potential, are available for $25 from: American Council for an Energy-Efficient Economy, 1001 Connecticut Avenue, Suite 535, Washington, D.C. 20036.

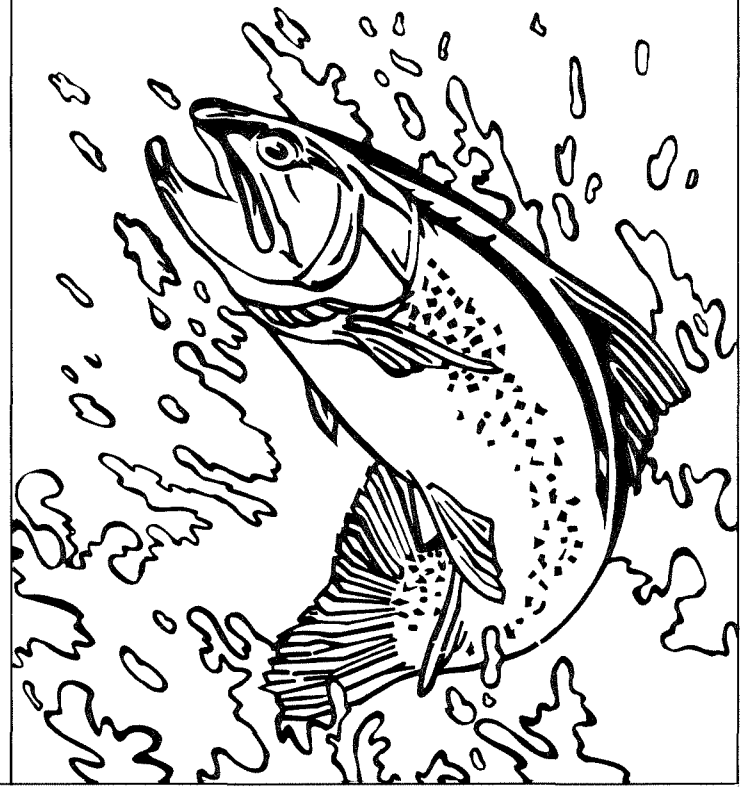
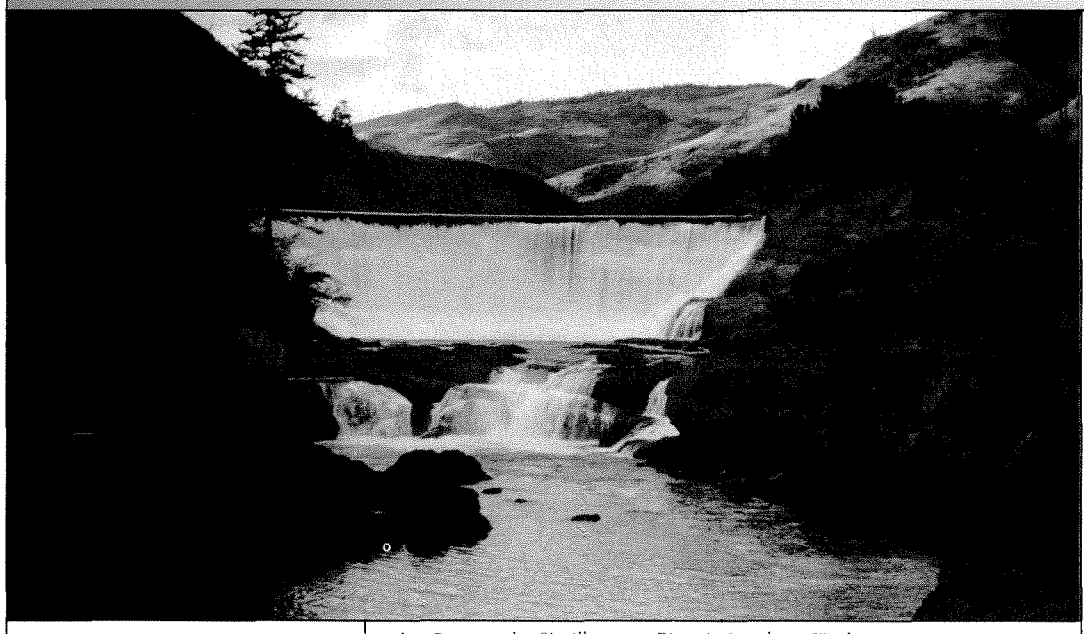


Illustration: Marty Todd

In The News



Enloe Dam on the Similkameen River in Northern Washington.

FERC rescinds Enloe Dam license

Long-controversial Enloe Dam on the Similkameen River in Eastern Washington may remain shut down as a result of a recent ruling by the Federal Energy Regulatory Commission (FERC). The ruling rescinds the license obtained by the Public Utility District of Okanogan County to reopen the dam when fish and wildlife protection is accounted for.

The PUD had applied for and received the license on March 3, 1983. That order was appealed by the Colville Confederated Tribes, the Yakima Indian Nation, the National Marine Fisheries Service, the National Wildlife Federation and Washington State Sportsmen's Council, as well as the Northwest Power Planning Council.

These appeals follow a pattern of fisheries community opposition to the dam, set soon after it was first licensed in the 1920s. The dam is an impassible barrier for fish attempting to migrate beyond it into the upper Simalkameen River Basin. (Below the dam, a natural waterfall creates a partial obstruction for the fish.) This basin is a potential source of miles of viable habitat for ocean migrating (anadromous) salmon and steelhead in the Columbia River Basin.

The dam has been out of operation since 1959, when obsolete equipment and disagreements over fish passage facilities led the PUD to close it. Subsequent applications for a new license were dismissed in 1974. In 1976, Congress, as part of the Reclamation of Authorizations Act of that year, called for fish passage at the facility before it could be relicensed.

In 1977, the Bureau of Reclamation determined that removal of the dam would be the best method for improving fish passage on the river. The Bureau later revised its recommendation to include laddering the dam or providing trapping and transport facilities as alternatives to the dam's destruction.

When FERC issued Okanogan County PUD a new license for the dam in 1983, the organizations mentioned above argued that FERC had failed to require the PUD to implement specific anadromous fishery protection and enhancement measures.

In its recent decision, FERC stated, "It is clear to us that the anadromous fishery issues must be resolved before a decision can be made on whether or not it would be in the public interest to issue a license for a project at the Enloe Dam site." Consequently, the license was rescinded until a clear direction for fish protection at the site has been identified. —*CC*

"Energy Edge" widened

The four-state competition to make new Northwest commercial buildings highly energy efficient has been expanded to include "virtually any commercial building in the planning stage," according to Nancy Benner, project manager for the Portland Energy Conservation, Inc. (PECI). Eligible building types include large office, retail/office combinations, institutional buildings, health clinics, hotels, motels, large and small retail operations, grocery stores, restaurants, warehouses and others. Broadening the eligible categories was a result of the high level of interest from owners and designers.

The competition offers all applicants a free energy analysis of their building and technical assistance to help improve the energy efficiency of every building in the competition.

Winners receive incentive payments and recognition for their award-winning designs. The third round of applications closes on July 15. For further information, contact Nancy Benner at (503) 248-4636, or the "Energy Edge" coordinator in your area. —*CC*

Photograph by Carlotta Collette

In The News

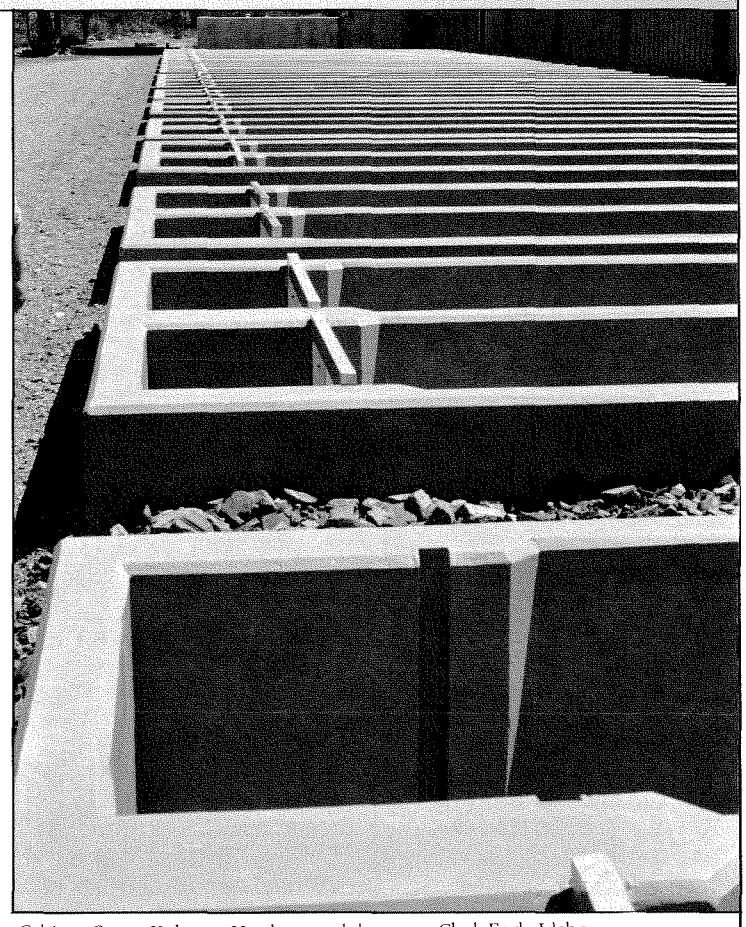
New Kokanee hatchery opening in Idaho

Idaho's Governor John Evans and Northwest Power Planning Council Chairman Bob Saxvik will head a list of dignitaries celebrating the grand opening of Idaho's Cabinet Gorge Kokanee Hatchery on the Clark Fork River. The event will take place on Saturday, July 12 at 11 a.m. at the hatchery eight miles outside of Clark Fork, Idaho. The ceremony and tour of the new facility are open to the public.

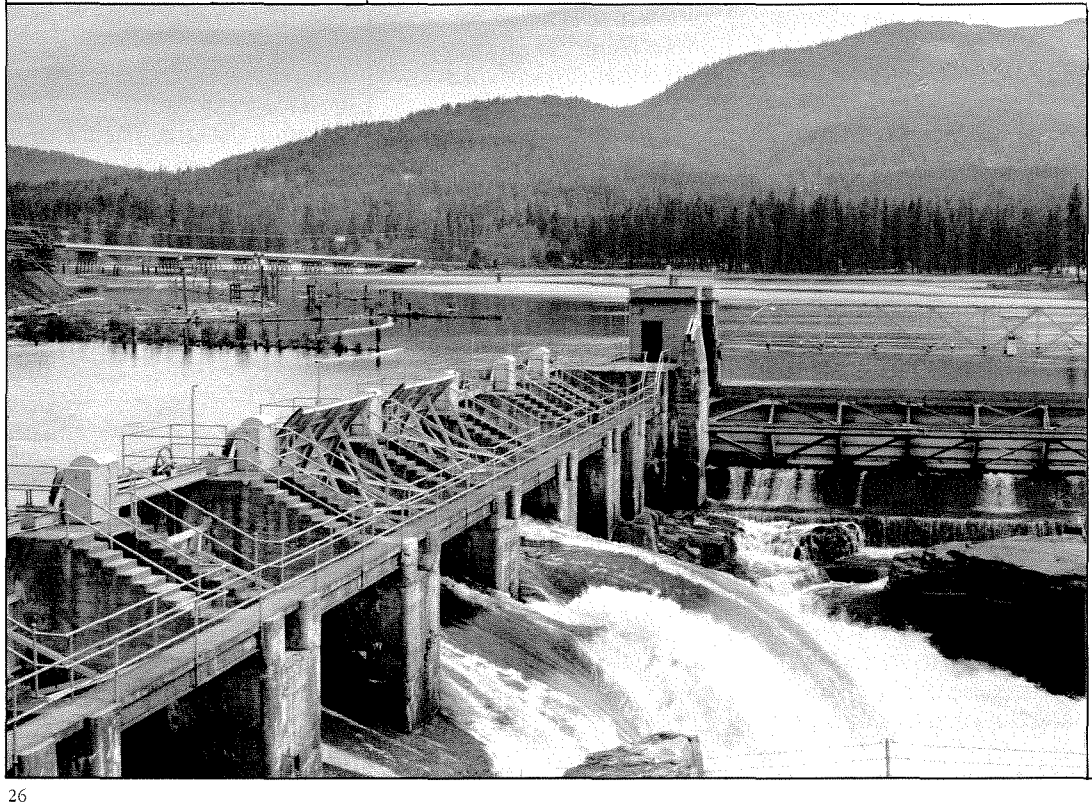
The kokanee hatchery is a joint venture of the Bonneville Power Administration, the Washington Water Power Company, and the Idaho Department of Fish and Game. It is the first hatchery constructed under the Northwest Power Planning Council's Fish and Wildlife Program. The Council approved the hatchery in early 1983 to help reverse declining kokanee populations in Lake Pend Oreille. Contractors completed construction last November, nearly one year ahead of schedule.

Bonneville Power Administrator Peter Johnson will also address the public during the brief ceremony. Other speakers will be Idaho Department of Fish and Game Director Jerry Conley and Washington Power Chief Operating Officer Jim Harvey.

Following the 11 a.m. ceremony, the public will be free to tour the hatchery and view an array of displays featuring hatchery operations, the life history of the kokanee salmon, and the collection of artifacts from early Indian and later Chinese railroad employee encampments that were uncovered on the hatchery site. Washington Water Power will also debut a video the company recently produced about the hatchery and the cooperative efforts that made the facility possible.



Cabinet Gorge Kokanee Hatchery and dam near Clark Fork, Idaho.



The Cabinet Gorge Hatchery will bolster declining populations of kokanee salmon in Lake Pend Oreille by producing and releasing about 20 million advanced kokanee fry each year. Kokanee, introduced into the lake over 45 years ago, are a land-locked form of sockeye salmon. Local sportsmen once harvested nearly 1 million kokanee per year, but that number declined to 200,000 by 1980. With the new hatchery, fisheries managers hope to increase the annual catch to 750,000 adult kokanee.

—Beth Heinrich

Photographs: Beth Heinrich

Calendar

June 21-22—"15th Annual Columbia River Short Course," an overview of the complex issues facing the Columbia River and Columbia River Gorge, presented by Washington State University and Oregon State University through the Sea Grant Marine Advisory Program. For more information: Mike Spranger, (206) 543-6600, or Suzie Higert, (206) 696-6018, Washington Sea Grant Program, 1919 NE 78th Street, Vancouver, Washington 98665.

June 22-25—Annual Meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) at the Janizen Beach Red Lion Hotel in Portland, Oregon. For information: Meetings Department, ASHRAE, 1791 Tullie Circle NE, Atlanta, Georgia 30329, (404) 636-8400.

July 9-10—Northwest Power Planning Council meeting in Spokane, Washington.

July 16—"Seminar on Instream Flow Methodologies" at the Four Seasons Olympic Hotel in Seattle, Washington. Sponsored by the Electric Power Research Institute. For information: Sharon Luongo Conference Coordinator, Electric Power Research Institute, P.O. Box 10412, Palo Alto, California 94303, (415) 855-2010.

July 20-23—"1986 Western Association of Fish and Wildlife Agencies and Western Division of The American Fisheries Society Joint Conference" in Portland, Oregon. For more information: Gail Samura, Oregon Department of Fish and Wildlife, P.O. Box 59, Portland, Oregon 97207.

July 21-August 22—"Fisheries Data Management Using Microcomputers," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University, in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

August 6-7—Northwest Power Planning Council meeting in Kalispell, Montana.

August 25 - September 18—"Fisheries Economics," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University, in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331; (503) 754-2624.

September 10-11—Northwest Power Planning Council meeting in Portland, Oregon.

Compiled by Ruth 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 they are.)

Issue Papers

- ☐ Staff Issue Paper on the Impact of Oil and Gas Price Changes on the Power Plan (See page 11.)
- ☐ Western Energy Study Draft Workplan
- ☐ Staff Issue Paper on Salmon and Steelhead Research (See page 17.)
- ☐ Staff Issue Paper on Salmon and Steelhead Planning (See page 17. Formerly called the Production Planning Issue Paper.)
- ☐ Technical Discussion Paper: Genetic Considerations for Salmon and Steelhead Planning, Draft of Final Report (See page 17.)
- ☐ Technical Discussion Paper on Salmon and Steelhead Planning Model (See page 17.)

Other Publications

- ☐ Draft Northwest Power Planning Council Sixth Annual Report
- ☐ 1986 Power Plan
- ☐ Summary of 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (See page 7.)
- ☐ 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (A five-volume set.)

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, or toll free 1-800-222-3355 in Idaho, Montana, and Washington, or 1-800-452-2324 in Oregon.)

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