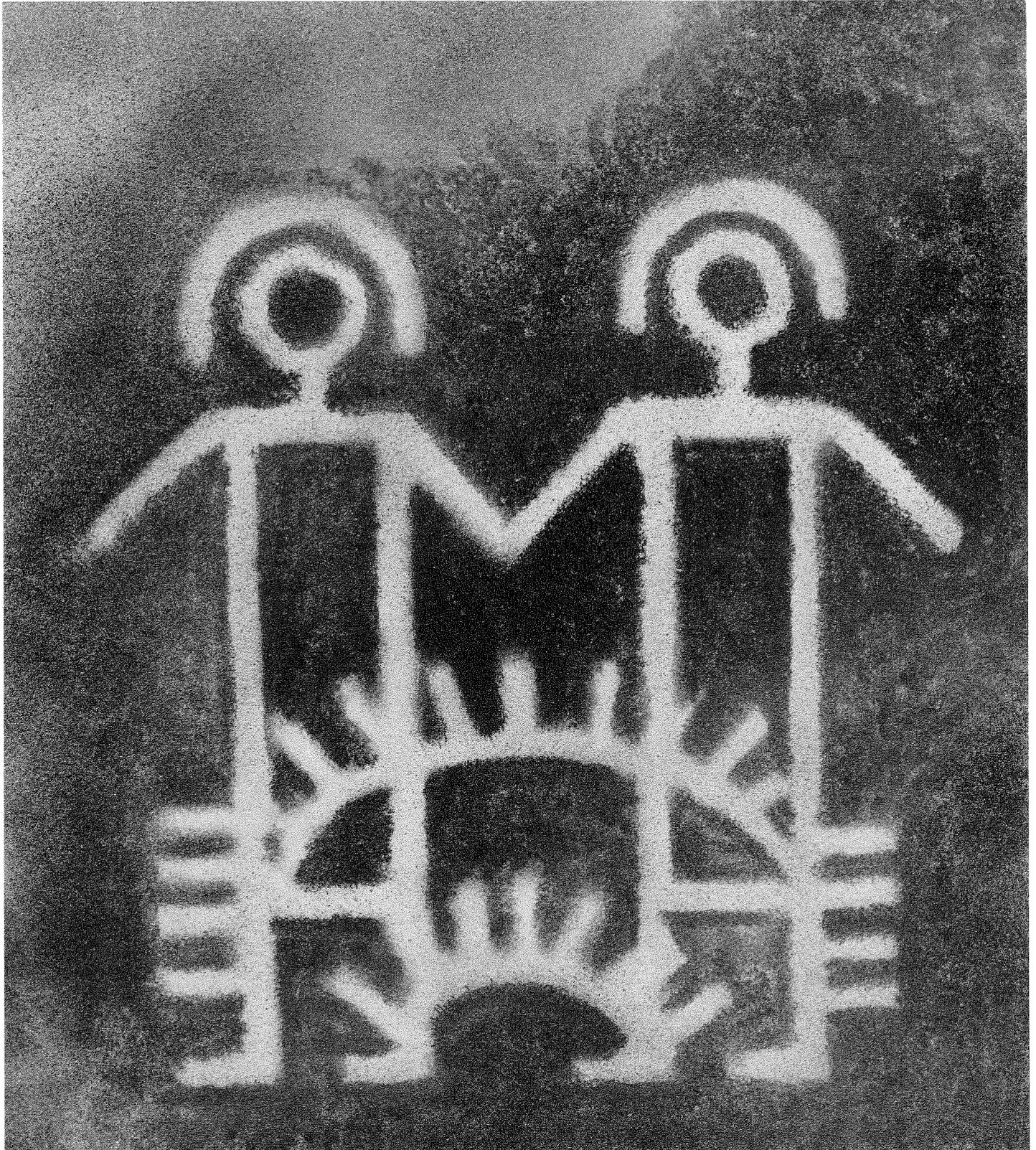


# N O R T H W E S T ENERGY NEWS

Volume 3, No. 5

Northwest Power Planning Council

September/October 1984



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## NORTHWEST ENERGY NEWS

is published bi-monthly by Northwest Power Planning Council,  
700 S.W. Taylor, Suite 200, Portland, Oregon 97205

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.

Editor: Dulcy Mahar

Graphic Design: Linda Sawaya

# EDITOR'S NOTES

It is said that the Indians call the salmon their brothers and sisters. Truly, the history of both the salmon and the great Indian nations of the Northwest are inseparable. So too, their futures are intertwined, not only by cultural and religious relationships, but by law as well.

The Northwest Power Act of 1980 made specific tribes of the Columbia Basin full partners with other parties in the coalition fighting to save the Basin's fish and wildlife. Two stories in this issue, one on the Yakima Basin and the other an interview, touch on Indian rights and heritage.

Because of this, we felt it would be appropriate to use Native American art for our cover. Sandy Osawa, a Makah (Olympic Peninsula) Indian, was referred to us by the Columbia River Inter-Tribal

Fish Commission. She and her husband work out of Seattle-based "Upstream Productions," which produced this issue's cover. The design is based on petroglyphs found in the middle Columbia River area near Vantage, Washington.

In that area, a number of these "twinned" figures appear depicted as identical anthropomorphs holding hands. The rayed arch, possibly the sun, is another common motif.

Petroglyphs date back to prehistoric times. They were painted or carved, where the river cut through basaltic rock, on the walls of caves and canyons.—DM

Cover illustration by Upstream Productions.

# CALENDAR

**September 14-15** — 1984 Northwest Solar Conference in Portland, Oregon. Sponsored by the Solar Energy Association of Oregon.

**September 19-20** — Northwest Power Planning Council Meeting in Yakima, Washington. (Note change of place.)

**September 24-25** — Wild Trout III in Mammoth, Wyoming. Sponsored by the Federation of Fly Fishers, Trout Unlimited, U.S. Department of Agriculture and U.S. Department of Interior. Contact the Federation of Fly Fishers, P.O. Box 1088, West Yellowstone, MT 59758

**September 28-30** — Warm Springs Conservation Conference at Kah-Nee-Ta Resort in Oregon. Contact Susan Case, Columbia River Inter-Tribal Fish Commission, 2705 E. Burnside, #114, Portland, OR 97214, (503) 238-0667

**October 3-5** — Northwest Small Hydroelectric Association Annual Conference/Seminar/Trade Exhibit at the Jantzen Beach Thunderbird in Portland, Oregon.

**October 10-11** — Northwest Power Planning Council Meeting in Boise, Idaho. (Note change of place)

**October 26** — Conference on the Politics and Economics of Columbia River Water in Portland, Oregon. Contact Michael S. Spranger, Washington Sea Grant, 1919 N.E. 78th Street, Vancouver, WA 98665, (206) 696-6018.

**October 31-November 1** — Northwest Power Planning Council Meeting in Butte, Montana.

**November 8-9** — Conference on Investing in Cogeneration in Arlington, Virginia. Contact Joanne Van de Merlen, Energy Bureau, Inc., 41 East 42nd St., New York, NY 10017, (212) 687-3177.

**November 28-29** — Northwest Power Planning Council Meeting in Portland, Oregon.

**November 28-30** — World Energy Engineering Congress in Atlanta, Georgia. Contact Albert Thuman, Association of Energy Engineers, Suite 340, 4025 Pleasantdale Road, Atlanta, GA 30340, (404) 447-5083.

Compiled by Ruth Curtis

**Locations for Northwest Power Planning Council meetings scheduled for September 19-20 and October 10-11 have been reversed. The September meeting will be held in Yakima, Washington, and the October meeting will be held in Boise, Idaho. Fish and wildlife program amendments are scheduled for adoption at the Boise meeting.**

# IN THE NEWS

## Changes proposed for surcharge calculation

The Northwest Power Planning Council has entered a rulemaking process to amend its method for calculating surcharges as outlined in Appendix D of the Northwest Power Plan. Rulemaking is required for any substantive changes in the plan.

The Council has been authorized by Congress to recommend that the Bonneville Power Administration levy a surcharge of not less than 10 percent nor more than 50 percent on jurisdictions which do not adopt the Council's model conservation standards by January 1, 1986. The surcharge is designed to provide a way to recapture the added costs to the region created by failure to adopt the standards.

The Council adopted model conservation standards and recommended a surcharge on jurisdictions that fail to adopt

them as part of the Northwest Conservation and Electric Power Plan in April of 1983.

Those decisions are not in question in the current rulemaking, which deals only with the method for calculating the surcharge.

The decision to revise the calculations was made after Bonneville Power Administration staff identified potential administrative problems due to the complexity of the surcharge calculations. The Council agreed to enter into rulemaking to simplify the procedures after it reviewed oral public testimony and written testimony based on an issue paper the Council published on the subject in July.

According to Tom Foley, the Council's manager of conservation and resources, the proposed plan amendment would improve the method of calculating the surcharge in four ways.

"First, state and local jurisdictions and Bonneville customers will be able to see clearly how the surcharge might affect them. Second, Bonneville's duties will be lessened as it will not have to maintain voluminous records on consumers in its customers' territories. Third, the surcharge will be imposed only once for each year that standards are not adopted or equivalent energy savings realized. And fourth, potentially time consuming and data intensive calculations will be eliminated," he explained.

The proposed changes would provide for a 10 percent across-the-board surcharge on firm loads for jurisdictions which do not adopt the standards. Sue Hickey, director of Bonneville's planning and evaluation division, called the proposed changes a "significant improvement" and cited "ease of administration and

appropriateness of application" in the new approach.

The rulemaking process will involve a public comment period which will run through 5 p.m., October 12. Public hearings will be held in each state between September 24 and October 1. A final decision on the amendments will be made at the Council's October 31/November 1 meeting in Butte, Montana. An issue paper on the surcharge methodology and copies of the proposed change are available from the Council.

## Council, gas companies settle out of court

A suit brought by a group of six Northwest natural gas companies challenging the Northwest Power Planning Council's power plan has been settled out of court.

The gas companies dropped the suit after the Council

Oregon's Senator Mark Hatfield will be the keynote speaker at the "Politics and Economics of Columbia River Water" conference on October 26, 1984 (see Calendar). Northwest Power Planning Council member Kai Lee and Executive Director Edward Sheets will be among more than a dozen panel members whose job will be to inspire and encourage "a dialogue and debate . . . that will lead to better management decisions" regarding the long-term use of the river's water.

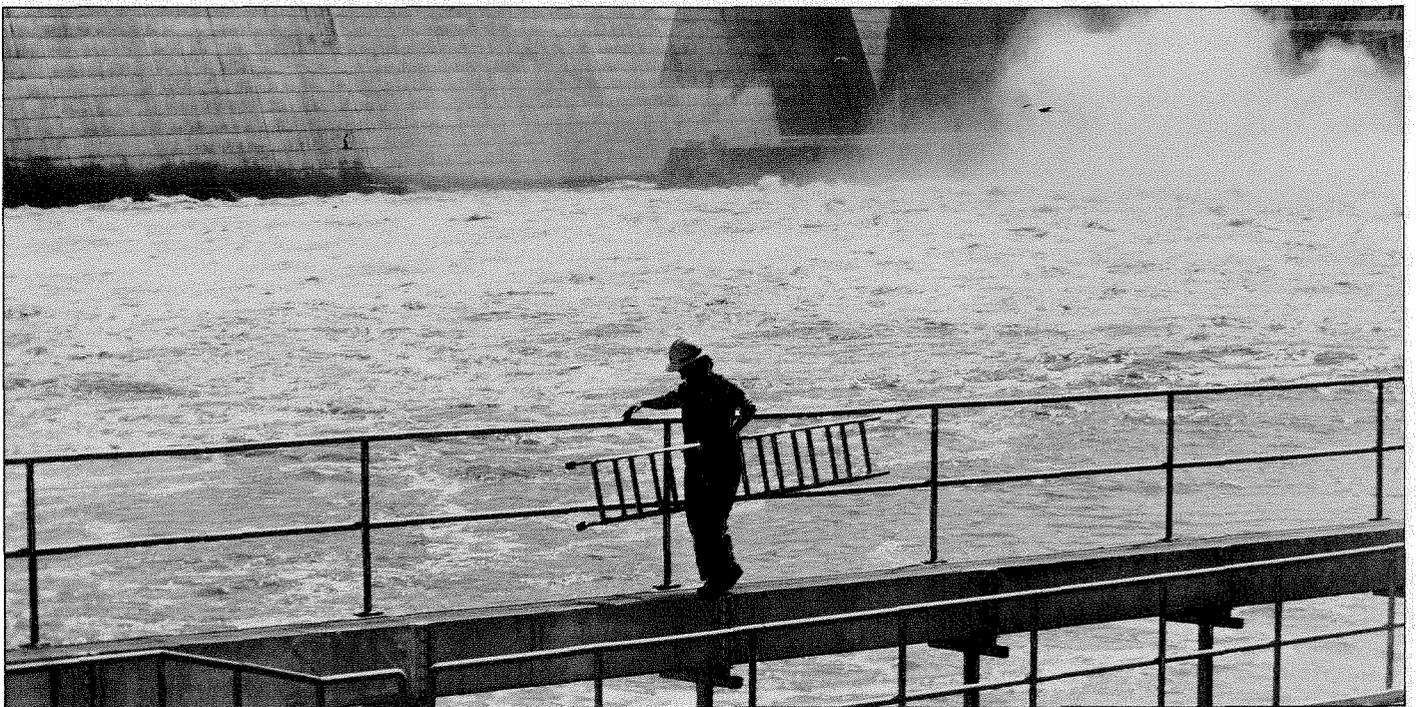


Photo by Carlotta Collette

## IN THE NEWS

continued

agreed to technical amendments to Appendix J of its power plan. The appendix deals with model conservation standards, and the amendments clarify that the standards apply only to electrically-heated homes.

The Council also said it would consider future changes if it can be demonstrated that significant fuel switching from natural gas to electricity occurs as a result of the plan's conservation programs and if fuel switching reduces the cost effectiveness of the plan for consumers.

### Two amendments affect regional power plan

The Northwest Power Planning Council has amended Action Item 14.1 of its power plan following a public comment period. The amendment will allow the Bonneville Power Administration greater flexibility in selecting projects to test the feasibility of resource options.

The public comment period for a second proposed amendment was extended to September 4. That proposal addresses the method for determining eligibility for 100 percent home weatherization financing as outlined in the

power plan's Program Design Principal 1E. No decision had been made on that amendment at press time.

### Council seeks input on region's economic future

Some 260 regional leaders representing businesses, utilities, government agencies, academics, and public interest groups have been asked for their opinions on the future of the Northwest economy. The Northwest Power Planning Council has distributed a "Staff Working Paper on Economics and Demographics" to these leaders to solicit their opinions and stimulate discussion.

The working paper is part of efforts to develop new economic and demographic assumptions for use in revision of the Council's power plan in 1985. The Council has also formed a new Economic Forecasting Advisory Committee.

Comments received as a result of the working paper will provide input into the development of new assumptions. Responses to the paper are due by 5 p.m. on October 1. Copies of the paper are available on request from the Council. A tentative schedule calls for a preliminary draft of

new assumptions to be released in late November with a public comment period running through January 4.

### Northwest researchers work toward 'fat' fish

Northwest fish are the guinea pigs in several regional studies going on now. In Vancouver, B.C., a \$100,000-a-year government Fisheries Department project is treating young salmon or salmon eggs with male salmon hormones which sterilize them.

Sterile salmon are not concerned with spawning in their natal hatcheries. It's hoped they will be content instead to grow old and fat in the ocean where they may some day constitute a fine commercial crop.

Scientists performing these experiments have also noted that female chinook treated to the same hormone become capable of producing their own sperm. The sperm itself is unique and will only produce female progeny.

A similar research project is being conducted by biochemical geneticists at the National Marine Fisheries Service in Seattle. The salmon in this case are hatched from eggs that contain three sets of

chromosomes rather than the usual two. Like the Canadian salmon, they are fat and sterile, but, unlike their northern counterparts, these fish may retain an instinctive need to return to their spawning grounds.

Seattle scientists released triploid steelhead in the San Juan Islands this summer, and more are scheduled for out-planting in coming months. There is some concern that these potential giants might spend their long lives at the mouths of hatchery streams "slurping" down smolt. To limit the effects of such gluttonous grazing, only "small" releases of "30,000-40,000 at a time" are planned.—CC

### Bonneville moves to protect WPPSS investments

The Bonneville Power Administration is recommending that the Washington Public Power Supply System adopt "assignment agreements" that would protect Bonneville's investment in WPPSS plants 1, 2, and 3.

The move would protect the agency from an adverse court decision. In the 1970s, Bonneville entered into net-billing contracts with WPPSS and participating utilities to acquire the output of the WPPSS plants. The federal court was asked to determine whether the utilities had the authority to enter the agreements. While the court upheld the agreements' validity, the ruling has been appealed to the U.S. Ninth Circuit Court.

Bonneville maintains the assignment agreements are necessary to protect WPPSS plant 2 and to preserve the region's options on plants 1 and 3 — resumption of construction, continued delay, or termination.

The Council has a new photo reflecting the change in its membership; Kai N. Lee of Washington and Donald W. Godard are new members.



Seated (l. to r.):  
Council Chairman Keith L. Colbo,  
Vice Chairman Leroy H.  
Hemmingway.  
Standing (l. to r.):  
Kai N. Lee, Charles Collins,  
Gerald Mueller, Donald W. Godard,  
Robert (Bob) Saxvik,  
W. Larry Mills.

## IN THE NEWS

continued

### Regional planning bill gets mixed support

It was termed an idea whose time has come by Congressman Richard Ottinger of New York. Nevertheless, the concept of more regional planning bodies like the Northwest Power Planning

Council will likely have to wait at least one more year.

HR 5766, a bill to authorize such planning bodies, received heavy opposition from some utilities and the U.S. Department of Energy. The main thrust of the opposition argument is that such bodies would create another layer of

bureaucracy without offsetting benefits.

Ralph Cavanagh, attorney for the Natural Resources Defense Council, argued on behalf of the bill. "No utility is an island," he told a Congressional subcommittee, "... decisions about developing and transferring power supplies

have consequences that reverberate far beyond the confines of the state of origin. Given the way U.S. power pools are actually organized, state boundaries make about as much sense as the African national borders drawn by European colonial powers."

## NORTHWEST

# Sports

**It's the best record of any nuclear project in the country,** according to Alexander Squire, deputy managing director for the Washington Public Power Supply System. He was referring to 69 "reportable" events at WPPSS plant 2, which began operation in Richland, Washington earlier this year. Squire says the problems reported were minor and had little impact on the plant's safety. "As a matter of fact," he said, "the identification, reporting, and resolution of these deficiencies are evidence of the Supply System's commitment to strict adherence to technical specifications and operating procedures."

**They'd pay higher mortgages for energy efficient homes** say Oregon citizens. An Oregon Department of Energy survey of 603 people showed overwhelming support for conservation. Some 76 percent of the respondents said they'd be willing to make higher payments for an energy efficient home and an even greater number supported new energy efficient codes. This was despite the fact that 90 percent of the participants believe that the state has an adequate or surplus supply of energy.

**Seattle should adopt model conservation standards** according to a citizens advisory committee which has made the recommendation to Mayor Charles Royer. Maura O'Neill, spokesperson for the New Electric Service Policy Citizens Advisory Committee, said that adoption of the Northwest Power Planning Council's standards would mean, "the city would be continuing a long tradition of leadership in the area of energy conservation." The committee is made up of groups representing low income, environmental, commercial, industrial, and development concerns.

**Regional aluminum plants operated at 68 percent capacity** last year, according to *Northwest Aluminum News*. That's up slightly from the previous year's 66 percent but far below 1981's 96 percent. Last year the companies also paid the Bonneville Power Administration over \$448 million for electricity, 96 percent of what was paid out by all direct service industries. This represents 22 percent of all power sold by Bonneville during the year.

**Government involvement in energy conservation research** has dropped to 11 percent of all such research, according to a study released by the Building Thermal Envelope Coordinating Council. Private industry and private and academic laboratories account for half of all such research, according to *Energy Design Update*.

**Peanut Power may become a new term in the power world.** The municipal utility of Dotham, Alabama, which calls itself the "peanut capital of the world," is planning to fuel its new power plant with peanut shells, according to *Resource Recovery Report*.

**All rate relationships should be considered** according to the region's public and private utilities. They have petitioned Northwest congressmen to expand a study requested by Oregon Senator Mark Hatfield. The study, sought by industries which purchase power directly from the Bonneville Power Administration, examines only the relationship between regional power costs and the aluminum industry. The utilities believe that rate impacts on all regional industry and agriculture should be considered.

**The leadership that brought about the regional power act** is what is needed to settle the dispute over exchange rates, according to an aluminum industry executive. Writing in *Reynolds News*, Richard Bidwell, director of the company's energy resources, says he hopes that "what was once a coalition that put aside its differences and worked for the good of the entire Northwest and its citizens is not so ripped apart that it cannot be repaired . . ."

**The Bonneville Power Administration found itself powerless** — literally. Last summer water seeped into an underground vault at the agency's Northeast Portland headquarters shorting out power. Computer terminals went dead, offices darkened, and phones failed to light up so that no one could answer them, although they continued to ring.

**The latest bumperstickers spotted around Oregon** read "Real Oregonians Don't Eat Feedlot Salmon."

INTERVIEW:

## KATHRYN BRIGHAM

by Carlotta Collette

***It*** is a windy day towards the end of the summer fishing season. Kathryn Brigham climbs down the wooden ladder to the platform some 12 feet below the sidewalk. The traditional long-handled net sits there. It is perhaps 20 feet long and the net itself is wide, six feet across and just as deep. A long line leads from the net back to Kathryn as she lowers the pole and hoop into the river.

*Sometimes I can tell if there's a fish by the tug on the net, but if not, the line helps.*

As she speaks she gracefully sweeps the pole up and out of the water. Her movement is quick but the net is empty.

*I felt something. Maybe it was just the river. There aren't many salmon, just some steelheads. Our big salmon run comes in September. Of course there are no runs like before. There are barely enough fish to meet our ceremonial needs, let alone the needs of a commercial fishery.*

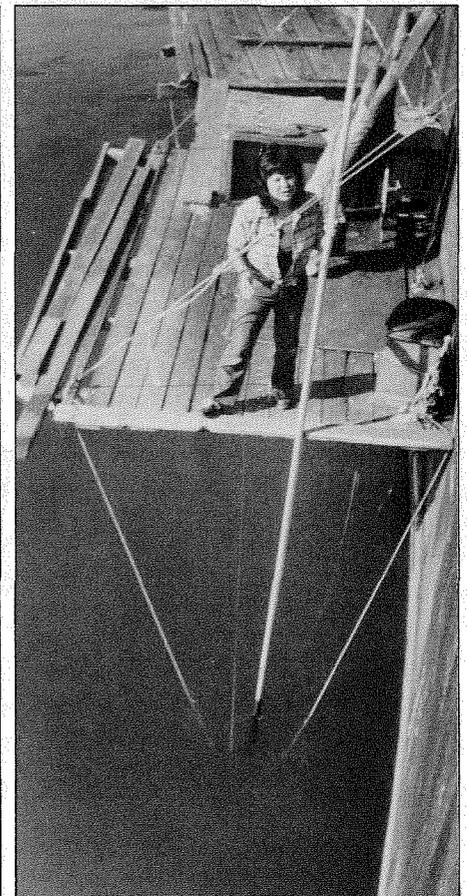
Kathryn Brigham is the great-great granddaughter of a Cayuse Indian leader. Her grandmother is Nez Perce. Her husband is a Walla Walla Indian from Celilo Falls and she herself grew up on the Umatilla Reservation. She has relatives in most of the tribes, on most of the reservations. The concept of "family" for her is very broad.

Like many of her peers she grew up learning to hunt and collect roots and berries. More than anything else, she learned to fish. Unlike many of her peers, she has become an important figure in resource politics in the Northwest.

*I was drafted into it. All I really knew about the fisheries came from my fishing. I was not really in tribal politics before.*

What drew her in was her appointment in 1976 by the tribal council of the Umatilla Nation to represent them on the Columbia River Inter-Tribal Fish Commission. The Commission brings together representatives from each of the four confederated treaty tribes (the Nez Perce, Umatilla, Warm Springs and Yakima Indian Nations) to set fishing seasons for the Indian fisheries and, in numerous other ways, to protect the fish and wildlife of the Columbia River Basin.

Kathryn's work on the commission, which keeps her away from home at meetings and out visiting projects most of every week, is without salary. She is reimbursed for her expenses, but she would do it anyway, even if there were no compensation. She is doing it for her family.



A lot of people will say that the salmon are our brothers and sisters.



*A lot of people will say that the salmon are our brothers and sisters. They're a part of everything. We're a whole family and we need to look out for each other. We look out for the salmon and the salmon will look out for us. The same with the deer and the elk and even the roots and the berries. We're all just a big family and we have to live together.*

Despite her protest that she "was drafted into it," it really was natural for Kathryn to become a political leader in the Northwest. She comes from a family of tribal leaders.

Her great-great grandfather signed the treaty of 1855 for the Cayuse Tribe. That was the treaty (actually four separate treaties) that created the Northwest's four Columbia River Basin confederated tribal reservations. It was the treaty in which the tribes reserved their fishing rights, the right to hunt (recognizing that they would lose some wilderness with time and the growth of the white population) and the right to gather berries and dig favored roots. It was the treaty in which they ceded, in exchange for these retained rights, millions of acres of their land.

Kathryn's great grandfather was a tribal leader also, and her grandfather, Sam Kash Kash, knew most of the languages spoken by the individual tribes and often acted as a translator among them. For 50 years he served on the councils and fish committees, attending the meetings that led to the tribal government structure that now manages life for the Indian people in the basin.

As the eldest daughter of six children, Kathryn often accompanied her grandfather on his trips to visit the other tribes.

*I used to drive my grandfather to the meetings. I'd sit in there and I'd listen to them. After the meetings were over I'd ask questions for clarification. I'd turn to him for advice as to what I should be doing. He would get a good chuckle out of me once in a while, because I'd ask some silly questions, but he was pretty patient with me. That's when I began to understand what my grandfather's responsibility was, and he began to pound into me what my responsibility was.*

**K**athryn arrives at her interview bringing her daughter, a nephew and her granddaughter. She wants to make a point at the outset:

*We do everything to protect the fish for our children and our children's children. I want my daughters and my granddaughter to be able to fish the way we do. This work is for them.*

Kathryn, her husband, their daughters and some of their friends all fish off scaffoldings at Cascade Locks, inside the channel that hasn't been used to alter the water level since the Bonneville Dam downriver raised it permanently. They've fished there for more than 20 years. Her husband's family used to fish at Celilo Falls. "Everyone did," she adds.

The scaffoldings they fish off now are not owned by Kathryn and her husband.

*All of us are exercising a tribal right. It's not an individual right. We upgrade the scaffolding and make improvements on it and fish here all the time, but it's always a tribal right. If it was an individual right, I think we'd be in a lot of trouble. We'd be approached by different people to buy out these sites. Some people might sell and some might not. Because it's a tribal right, the tribes have the responsibility to protect that right.*

**T**he fishing priorities for the tribes are strict. The first catch goes to the ceremonial uses of the salmon, still an essential part of the Indian religion. After the ceremonial needs are met the tribes attempt to catch a subsistence level of fish for their own consumption. If both of these needs are met, the surplus can be marketed.

Kathryn and her husband catch fish and hunt for a living. They understand the problems fishermen are having. This year there are some steelhead, enough for a commercial season even, but it has been some time since there was a good chinook catch to making a living off.

*At the Fish Commission we do everything we can for the fishermen. We try to provide the fishing seasons they need. But, we have to cut them off sometimes to meet our own escapement goals: to let enough fish return to the spawning grounds to provide the salmon for the future.*

*I think all of us have been taught that way. Sometimes we disagree on how that should be done, but we all know that that is the purpose of our tribal government: to watch out for the children's children.*

*When you look at the fish as a part of the whole, then you must look at everything. The fish need good water quality and good habitats. These must be protected so that the fish will always be there. This covers everything. It covers irrigation and farming, timber management, the dams, fishing – not only in the river but out in the ocean, too. All of these affect the water quality and that affects the fish.*

*Even when I was very little we would go up into the mountains to look for berries and to dig roots. When we got there if it wasn't clean, it was clean when we left. That was something that I just accepted, and I'm trying to teach my girls the same thing.*

*There was a big move in the forties and the fifties to get the Indians off the reservations and into the cities. A lot of Indians went into the cities and found that there was really nothing there for them. They forgot the old ways. This made a big gap in our culture. Now a lot of these people go back to the reservations to try to learn the values that they have forgotten. They were taught these things when they were young. Now they have to remember them.*

**C**oincidental with the Indian movement off of the reservations in the forties and fifties was the construction of hydroelectric dams along the Columbia River and its tributaries. As each project was planned, the valued resource of the tribal people was jeopardized. As each flow of the river was interrupted, so was the life cycle of the fish. What white society has had difficulty understanding is that the Indian life cycle was carefully integrated over many centuries with the cyclical lives of their partners the salmon. The Indians say, damage done to the salmon is damage done directly to the Indian people. That's the nature of families. Families suffer and prosper together.

To protect their negotiated treaty fishing rights for salmon, the tribes have, on many occasions, turned to the federal court system. Their right to the fish has been affirmed in several major court decisions. These include the nationally famous Belloni (United States v. Oregon & Washington) and Boldt (United States v. Washington) decisions (named after their respective federal court judges).

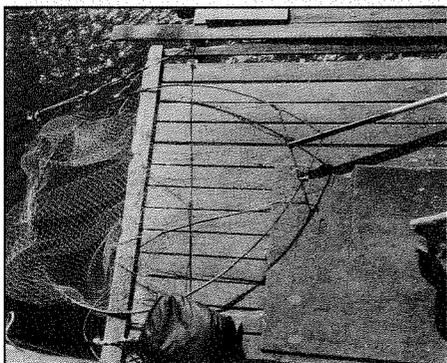
The Belloni decision, rendered in Oregon in 1969, declared that the tribes are entitled to "a fair share of the fish produced by the Columbia River system." This decision was used as a precedent by Judge George Boldt in 1974 in a similar proceeding in which the tribes were acknowledged to have retained the rights to 50 percent of the harvestable fish in specific parts of the state of Washington.



We all know  
the purpose  
of our tribal  
government:  
to watch out  
for the  
children's  
children.



When our treaties were signed they never mentioned that our fish would be gone.



Unfortunately, half of nothing is still nothing. The Boldt decision is being further refined in "Phase II" proceedings. The district court "Phase II" opinion stated that "the most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken.

"The tribes have an implicitly incorporated right . . . not to have the fishery habitat degraded by the actions of man which cause environmental damage," reasoned the court. The district court went on to identify "access to and from the sea . . . and an adequate supply of good quality water" as necessary to the survival of the fisheries. "Phase II" has been appealed to the United States Court of Appeals for the Ninth Circuit. That decision is still pending.

The court decisions helped clarify the issues in the Columbia Basin. But, they didn't settle anything. The damage was done. Salmon runs had already been reduced by more than two-thirds. Efforts to reduce the harm done to the fisheries had been carried out at most of the dams during their construction. The results had been less than glorious. The tribes were ready to return to the courts to demand coordinated improvements in the runs.

**W**e're no longer really looking at those lawsuits. We're hoping that the (Northwest Power) Act will carry this out. The Act says "the agencies and tribes," so the states have to look at us now. Already there is better coordination between us. That's something we've been battling for a long time. Before, when we told them they had treaty obligations they seemed to want to pat us on the head and say, "We're doing the best we can."

The tribes are recognized as management agencies now. We have always had the right to set seasons for our tribal people. The states can't regulate us unless they can prove that there is a conservation need. We're supposed to be "co-managers." We've had to bring them to court to get them to share the data with us so we could work with them. The court ordered them to.

My great-great grandfather's goal with the treaty was to protect our rights. My goal is the same. That has always been the goal. My daughter is 18. The other day she asked me, "Why aren't we fishing like we used to?" I told her that we're working on that. We're working on bringing them back. It's what the tribes are working for.

The treaties promised that. The states have an obligation. The Federal Government has an obligation. There are obligations through the Act. Our treaties said there was going to be fish all the way up the river. When our treaties were signed they never mentioned that our fish would be gone. They said that the deer and elk might be gone, but they never said that about the fish.

We might have to learn the white man's way to make them live up to their part of the bargain. We might have to go to school to be lawyers or biologists. But we will have our fish back. ■



# Fish & Fields

## THE YAKIMA DILEMMA

by Carlotta Collette

**W**hen Isaac Ingalls Stevens, first governor of the Washington territory, reported to his president in 1855 that treaties had been signed with the Northwest Indian tribes, he probably really believed his statement that, "The (treaty) council ended in a most satisfactory manner."

In fact, issues contested at that famous meeting are still not settled nearly a century and a half later. The Yakima people who signed away their thousands of years of "ownership" (a term not commonly used among Indian people) of more than 29,000 square miles in Washington state are still arguing for the rights they did *not* bargain away; the right to the Yakima and Columbia Basins' sacred resource, the salmon.

Few people in the Yakima Basin remember the time when there were real salmon runs there. When the Yakima was one of the most productive salmon rivers in the territory. When as many as 600,000 fish returned each year to spawn.

What they know of the Yakima now is the incredible topsoil, in some places as much as 200 feet deep. The Yakima tribal people knew, before white settlers came, that the arid valley would produce almost any crop, if more water than the seven-inch average annual rainfall could be provided. Even their great Chief Ka-mi-akin was said to have had a garden and livestock. But, the salmon were always their staple food and spiritual partners.

With the introduction of irrigation in the 1860s, the value in terms of production capability of the land soared and the salmon began to suffer. In 1903, just a year after the Reclamation Service (now the Bureau of Reclamation) was formed, the federal "Yakima Project" was begun. This major assignment diverted the waters of the various creeks and rivers in the Yakima Basin into a vast series of canals. Today an acre with water on it in the Yakima Basin produces about \$600 in fruits, grains or vegetables. In total, about half a million acres are under irrigation, yielding be-

tween \$2 and \$4 million in produce annually.

But, these are the same creeks and rivers that once carried the thousands of fish from the Yakima country to the Columbia River and from there to the ocean and back again. The fish that were guaranteed to the Yakima Nation by their treaty with Governor Stevens are frequently left high and dry. Some years all of the water is diverted. The few remaining fish go with it — into the fields.

"All of the water has been allocated to agriculture," explains Walt Larrick, fisheries biologist for the basin's irrigators. "It's not allocated for fish at all. There's never been a state water right issued to the fisheries resource. The federal government allocated it all to the state for farming. In fact, they over-allocated it. They've given water rights out for water we don't have. We have it in good water years, but not in bad ones, and we have bad water years regularly."

The Yakima River Basin is considered so important that it has a whole section of its own (section 900) in the Northwest Power Planning Council's fish and wildlife program. The U.S. Congress has agreed that the basin should have high priority. This past summer, at the strong urging of the Northwest congressional delegation, Congress approved appropriations to fund enhancement projects that will be carried out by the Bonneville Power Administration and the Bureau of Reclamation. Two qualities make the basin ripe for action. First, the problems are critical. Second, the potential for remedy is high.

Seasonal water shortages have been exacerbated by competing water interests. On the one hand, water is needed to protect fishing interests. On the other hand, it is needed to irrigate the orchards and other agriculture vital to the local economy. Fish problems are compounded by inadequate or nonexistent passage facilities.

Fishery experts estimate that correction of these facilities will increase Yakima salmon runs tenfold. Additional water to support salmon rearing and migration could increase runs another tenfold. Congressional action will speed construction of the projects by a full year.

The recent and long-sought appropriations may not be an end to the problems, but they are a beginning to a solution.

"The tribes argue," counters Bob Tuck, fisheries biologist for the Yakima Indian Nation, "that their treaty assures them not only fish, but the water to sustain them. That theirs is a prior right." The state of Washington is attempting to adjudicate the water rights issue. The tribe does not recognize the state's authority to do so. It's an example of the conflict in Yakima. Water is the key — both the quantity of it and the right to use it. Everyone needs it and no one has enough of it.

Most everyone in the basin agrees that if they could all cooperate, and the federal government were willing, something could be done about the water in the basin. Walt Larrick explains, "The Yakima Basin watershed can produce a little over 3 million acre feet of water per year. The storage facilities now can store about a million acres. The irrigation districts could use about 2 or 2½ million acre feet a year. There's enough water in the system, but there's no place we can store it to use it.

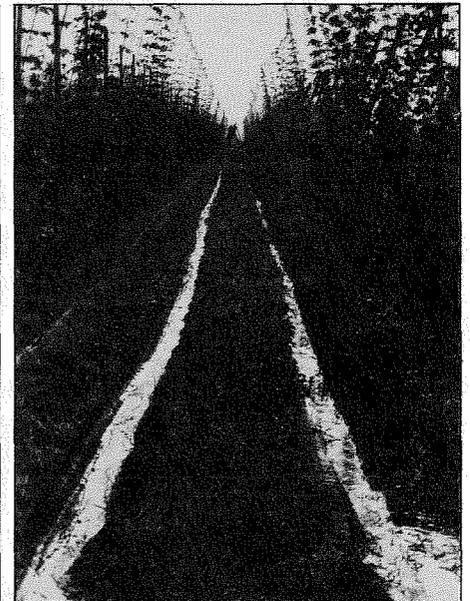
"In the spring and fall when it rains and snows, we have these freshets and the river comes up and really roars. Then it goes back out again. If we put it somewhere, then used it in the summer, we'd have a solution. We could meet instream flow needs and irrigation needs.

"Everyone would benefit. Everyone would get more water. But increasing storage is extremely expensive. It means building or raising existing dams. Everyone talks about Bumping Lake. That would cost hundreds of millions. And, there's no guarantee yet that the fisheries would necessarily get more of the water. They're worried that more water might just invite more irrigation."

So, increased water storage dedicated to the fisheries is on most people's wish list. (Some hold that water conservation will

solve the problem without storage.) The Bureau of Reclamation is studying several sites in the state to determine where it would be most effective and least expensive to build the needed facilities.

**B**ut, there's another problem in the Yakima Basin. Even when there is water in the river, the fish have difficulty passing the dams. For upstream migrants there are inadequate or nonexistent ladders. For the smolts heading down, some of the screens are more hazardous than helpful. The young fish are often impinged on the screens, or the screens fail to direct them into the narrow bypass that sends them over the spillways instead of into the irrigation ditches that lead to the fields.

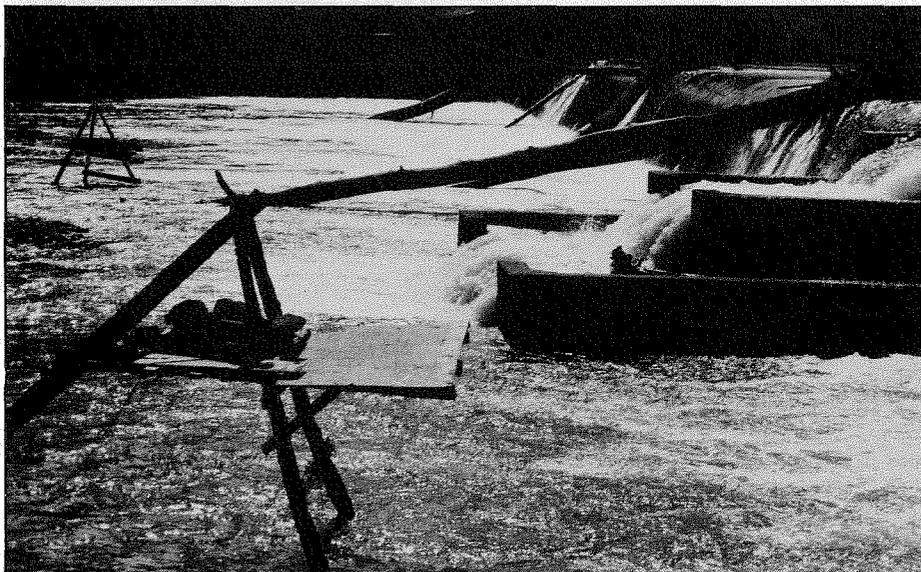


The irrigators told me all I had to do was develop a fish that could go through the holes around the screens . . .



Above: Roza Dam's fish bypass opening (center) will be enlarged and rotating screens (right) replaced to improve downstream fish migration.

Below: Indian fishing scaffolds dot the river near the fish ladder on the east branch of the Wapato Diversion Dam. The west branch of the dam has no ladder.



. . . and one that would also have legs so it could walk up the river when it comes back.

"When I first came here to work," says Tuck, "The irrigators told me that I didn't have any problem. All I had to do was develop a fish that I could train to go through the holes right around the screens, and one that would also have legs so it could walk up the river when it comes back."

On a good *day* before irrigation came to the valley, the spring chinook in the Yakima River might number in the thousands. This summer there were 1500 *total*. A very bad year, but an improvement over the mid-70s when there were only a few hundred spring chinook in a season.

On one day recently, there was a single female chinook slowly circling and surfacing in the slack water below the west branch of the Wapato Diversion Dam. Wapato Dam is bisected by an island. The east branch has ladders that ease fish passage over the dam. The west branch has nothing.

The chinook had come up the wrong side of the island. After swimming more than 450 miles, over all of the mainstem Columbia River Dams, this 40-inch fish eventually died just short of her goal: the gravel spawning ground where her journey began.

Tuck pointed her out. The next day he went back to see if he couldn't help her over the dam with a seine net. The channel was too deep. A few days later he found her dead on the gravel bars downstream. He recognized the fungus on her back fin.

"I've never seen fish stopped at Wapato, but I knew they weren't making it over. There's no ladder on that side. If there was more water she could have jumped the dam, but the diversion drained enough off to make it impossible. When I went to look for her I found others dead, too. Seven chinook in two hours. That's unheard of. Not even in a spawning survey [when biologists go out to assess the season's production] will we find many dead fish along the river."

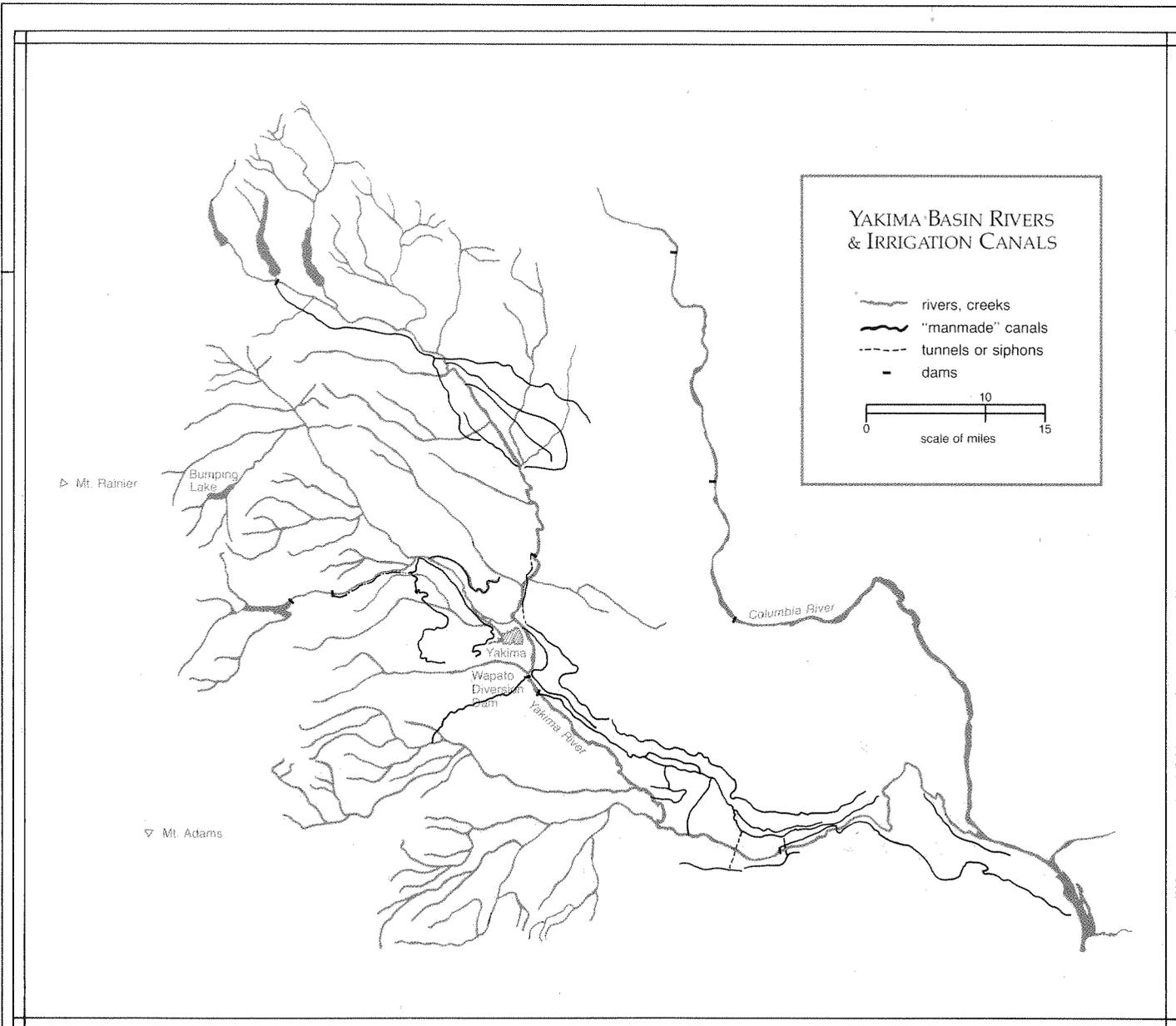
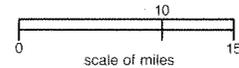
This problem has a solution. Unlike the larger problem of water rights and water quantity, fish passage can be remedied. Better screens and ladders can be installed. There is even a tentative agreement between the tribes and the irrigators that this is the path to take at this juncture.

Recent passage of federal energy and water project appropriations marks the concurrence of Congress in this first Yakima Basin consensus. The appropriations will assure funding for improvements on passage facilities at Wapato, Sunnyside, Roza and Prosser Dams.

Both the irrigators and the Indian tribes see this as the first small step towards solv-

### YAKIMA BASIN RIVERS & IRRIGATION CANALS

- rivers, creeks
- "manmade" canals
- - - tunnels or siphons
- dams



The Yakima Basin is crisscrossed with natural rivers and streams and more than 2,500 miles of man-made irrigation canals.

ing the bigger problems. Many of them also see these projects as the microcosm of the larger Columbia Basin problems and hoped-for solutions.

Walt Larrick agrees. "Everybody has strong ideas and positions and they're not too willing to budge from them. In the Yakima Basin you've got agriculture that's operated this way for a long time and they don't see any reason to change. On the other hand, you've got the fisheries that haven't had anything and they want everything now. Both sides realize that it's going to be a negotiated settlement, but they're reluctant to give in in the beginning for fear they'll lose something in the end.

"Seeing the government move on this helps get everyone else inspired to work on it, too. That's what it's going to take.

Everyone's always talking about doing something, but no one ever does anything. It's a common complaint.

"I think the irrigators respect the tribe's treaty rights. They're just saying, 'I don't want you to take my water for your fish. I'll work with you to get *more* water.' There can't be a long lasting solution until both the tribes and the agriculture community are satisfied."

Bob Tuck joins in, "There are water rights issued to the farms and there are treaty rights that provide water for the fish. We're trying to do something for both of them. Irrigation is just one of the competing issues for the water. There are exactly the same issues throughout the Columbia Basin. The Umatillas have exactly the same problems, the Walla Wallas, the same thing. It's the same in each of the

basins and sub-basins.

"The Yakima Basin is an obvious place to start the larger program. It's small enough so that it's do-able and identifiable. We've still got the potential to turn things around. There are still good spawning habitats. Conceptually you can see doing things in this basin. It's not overwhelming.

"Furthermore, if we can work these issues out through the Fish and Wildlife Program, we can save time and money. We can solve these problems in court, or we can find more water so no one has to lose. Going to court doesn't provide one new drop of water in the basin. These first projects at Wapato Dam and the others move us closer to the kind of coordination among entities that will bring back the fish." ■

# Thermabilt

home opens to rave reviews

by Mickey Riley

**T**here was standing room only at the "opening night" of one of Washington State's Thermabilt homes. The show actually began at nine on a warm summer morning as more than 50 people stood shoulder to shoulder at the Spokane home to watch the performance. The show was a "blower door" test. This is a test which gives one indication of a home's energy efficiency by measuring its air infiltration and leakage rates.

Scattered among the audience were the show's authors (members of the Northwest Power Planning Council), backers (representatives from the Bonneville Power Administration), and the director (Washington State Energy Office). The Council essentially wrote the script a year and a half ago when their Power Plan called for a demonstration program of 700 homes constructed regionwide to model conservation standards (MCS). The purpose was to demonstrate the costs and benefits of energy efficient construction as a means of conserving the region's energy resources. The homes are projected to use 60 percent less energy than a conventionally constructed home.

The demonstration program, funded by Bonneville, operates in Washington, Oregon, Idaho, and Montana. Each state has selected its own name. The State Energy Office, which administers the program in Washington, has selected *Thermabilt* as the name of the almost 300 homes now either completed or under construction in the state.

While several of the homes are presold, many are for sale and represent a good deal for consumers. The Energy Office and builders aim to have all homes sold and occupied by the fall so that data on energy consumption can be collected this winter.

As with any script, the real test is in the actual performance. A blower door test measures the home's performance by indicating its air infiltration rate (how many

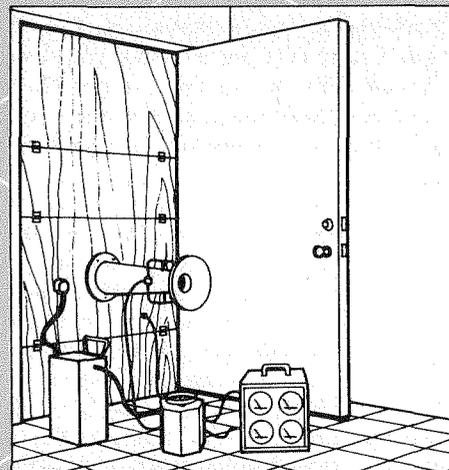
air changes take place in the house in an hour). An average new home has 0.6 air changes per hour (ach), which means you would have to reheat (or cool) the air in the home over 14 times per day to maintain a steady temperature.

Many homes participating in the demonstration program aim for 0.1 ach natural infiltration depending on climate zone and design path. The Spokane home, built by Eagle Mountain Construction Company, came in at 0.3 ach.

"We are extremely pleased with the results," said Bob Goertz of Eagle Mountain, "but not really too surprised. We did put a lot of very hard work into it to be sure the home performed well. And although the learning experience accounted for some extra time, we figure we'll be way ahead of the game the next time we do it."

Council members, however, were surprised. "What's remarkable to me," said

A blower door consists of a fan installed and sealed into an exterior doorway. The fan either pressurizes or depressurizes the house. Instrumentation connected to the fan measures the air leakage rate, from which the number of air changes per hour is calculated.



Chuck Collins, Council member from Washington, "is that a group of builders who had never built a home of this type before could build it so much tighter than the standards. We debated two years ago whether this was possible and decided it wasn't. It's surprising affirmation — and maybe even a criticism — of the standards."

Eagle Mountain is probably not your typical construction crew. The five-man team boasts degrees in chemical engineering, electronics, forestry, economics, and business administration. "We all met and worked together as Air Force fighter pilots over 20 years ago before deciding to start this business," says Goertz. "We moved to Spokane in 1979 and began building homes. The kind of construction we do addresses the whole spectrum of market needs, from the so-called 'affordable' range to superb custom."

This Eagle Mountain home is a four bedroom, two bath, 1,910 square foot home. The home has R-49 in the ceiling, R-19 in the walls, and triple glazed windows. It has a continuous vapor barrier and, like all homes in the demonstration program, an air-to-air heat exchanger to ensure the indoor air quality of a very "tight" well insulated home.

One of the more innovative aspects of this home is the use of an all weather wood foundation as opposed to the traditional concrete foundation. The chemical preservatives in the wood are pressure impregnated so they are permanent, water insoluble and non-leachable.

"The all-weather wood foundation means you don't have to wait around for good weather to get your foundation going," says Goertz, "and it's a lot less expensive in terms of time and material costs. This, and a relatively new, prefabricated trussed floor system also made of all weather wood, is tailor-made for the MCS home," says Goertz. "Both greatly facilitate insulating the foundation area and make it extremely easy to build to the MCS."

The builders have not yet completed the cost accounting on the homes, but their preliminary estimate is that the "extra"

## The Intertie: a Northwest Priority

It runs nearly a thousand miles — a giant electricity pipeline pumping power from the energy rich Northwest to water-shy California.

Since it was built in 1968, the Northwest-Southwest Intertie has earned the Northwest region over \$1 billion from the more than 200 billion kilowatt hours of energy delivered to California. But that may be only the beginning of its potential.

Historically, most of the energy sold through the Intertie has been seasonal surplus electricity available during the spring run-off on a non-firm, interruptible basis. Even then, access to the Intertie for utilities with power to sell was limited since the lines themselves had limited capacity.

Now, the issue of access has ballooned in importance because the Northwest has considerable excess firm energy to sell. The Bonneville Power Administration, which owns most of the Northwest portion of the Intertie, has developed a system to determine what share of the Intertie energy sellers will get. This system is spelled out in what is called the Intertie Access Policy.

About the only thing that isn't controversial about that policy is its name. As of now, Bonneville has begun operating under an interim or "near term" policy which will be in effect until August 1986. After that, the Long Term Intertie Access Policy — to be proposed later this year — will go into effect.

The issue is so critical to the region that the Northwest's public utility commissioners have asked the Northwest Power Planning Council to "undertake an investigation and review" of Bonneville's Intertie Access Policy and related energy sales to California.

In a joint letter to the Council, the commissioners noted that the Council is "the only regional body with authority to coordinate both investor-owned and publicly-owned utilities." As such, they said, the Council is the appropriate body to set regional policy on these issues.

The letter was signed by Conley Ward, Jr., president of the Idaho Public Utilities Commission; Tom Schneider, chairman of the Montana Public Service Commission; Gene Maudlin, commissioner of the Oregon Public Utilities Commission; and Robert Bratton, chairman of the Washington Utilities and Transportation Commission.

In a rapid response, the Council took up the challenge at its August meeting in Kalispell, Montana. Council members voted unanimously to inform Bonneville that the Council would begin working with the public utility and regulatory bodies and other relevant parties to take an "active role" in developing an "oversight policy" on a long-term Intertie Access Policy, intertie size, and out-of-region sales.

Keith Colbo, chairman of the Council, subsequently told the commissioners, "The Council believes that the issues related to out-of-region sales are extremely important to the people of the Pacific Northwest and especially to the implementation of the regional power plan. We believe that these critical considerations require a full and complete examination in an open and public forum."

The Council also has had strong words for Bonneville's two-year near-term access policy. The most serious problem the Council found centered on the interim policy's failure to acknowledge the Bonneville administrator's obligation to act in a manner consistent with the Council's fish and wildlife program.

Bonneville reports it will deny access to the intertie wherever it would interfere with the agency's obligations to provide equitable treatment for fish and wildlife. There is, however, disagreement between the Council and Bonneville over the interpretation of these obligations as outlined in the regional power act.

The Council believes the policy should acknowledge the "consistency requirement" with the fish and wildlife program, while Bonneville's policy uses vaguer language, saying it will take the program "into account." The Council's fish and wildlife director, Janis Chrisman, says the debate is more than an exercise in semantics. She cites provisions in the policy which appear inconsistent with the power act as well as with the fish and wildlife program.

For one, the policy treats new resources — those not yet licensed or constructed — more strictly than existing resources. The inference the Council draws is that Bonneville might be more lax in its fish and wildlife obligations for existing projects. The Council believes the regional act does not allow different treatment for new and existing resources.

*continued next page*

costs (i.e., the cost for building to this level of energy efficiency) came in right at the \$3/sq.ft. predicted by the Council (costs can also vary somewhat by climate zone).

"We actually feel we can come in below that," says Goertz, "for two reasons. One is that this was our first effort using some of these construction techniques and there is always a 'learning curve' factor. The second is that we worked a lot of overtime to have the house ready by the time of this open house. Some of the supplies, such as the acoustical sealant, we had shipped from Seattle at great expense. We have since found the product here in Spokane at half the cost."

All productions have their critics, and the question of costs has been a major one for the demonstration program. Many builders feel the extra cost to build to these levels of energy efficiency will dampen the market for homebuyers. But Eagle Mountain and others feel that the reduced electrical bills make the homes more than cost effective.

"At 14 percent interest over 30 years with five percent down," says Merlin Hatch, Marketing Director of Eagle Mountain, "the monthly payments for the Thermabilt home actually come out \$1 below payment for the same house without the energy saving features. And that's assuming that electricity rates will stay the same for the next 30 years, which we know they won't. For a first time homebuyer who can qualify for the 11.1 percent First-Time Homebuyer loan, it's possible to actually save \$30 a month."

"So, although the Thermabilt home may cost a few thousand dollars more, the actual monthly costs to the homeowner are virtually identical," continued Hatch, "and that's what most consumers are concerned about — monthly costs."

The excellent performance of the Eagle Mountain Home during its blower door test gives every indication of a "hit." How well the hit plays will be determined this fall and winter when the home is occupied and the actual energy bills come in. For now, the Eagle Mountain crew, the Council, WSEO, and Bonneville are pleased with their opening night performance. ■

Second, Chrisman notes, the policy could allow a loophole for operators and owners of existing resources to avoid complying with the fish and wildlife program. She explains, "Under the Bonneville proposal, it appears that a utility that wanted access to the Intertie could simply write a check instead of installing a bypass system or it could build a hatchery instead of providing flows. Both actions would undermine the program, particularly its emphasis on wild and natural fish production."

The Council also fears that, since the policy does not require sources of power to be identified, it would be possible to transmit power for a project which does not comply with provisions for protection and enhancement of fish and wildlife contained in the program.

Cogeneration is another controversial gap in Bonneville's interim policy, according to Edward Sheets, the Council's executive director. Cogeneration is the simultaneous production of energy for dual purposes from a fuel source. Because it is a less costly energy source than coal, the Council's two-year action plan specifically calls on Bonneville to "assist potential cogenerators in obtaining access to tie-lines."

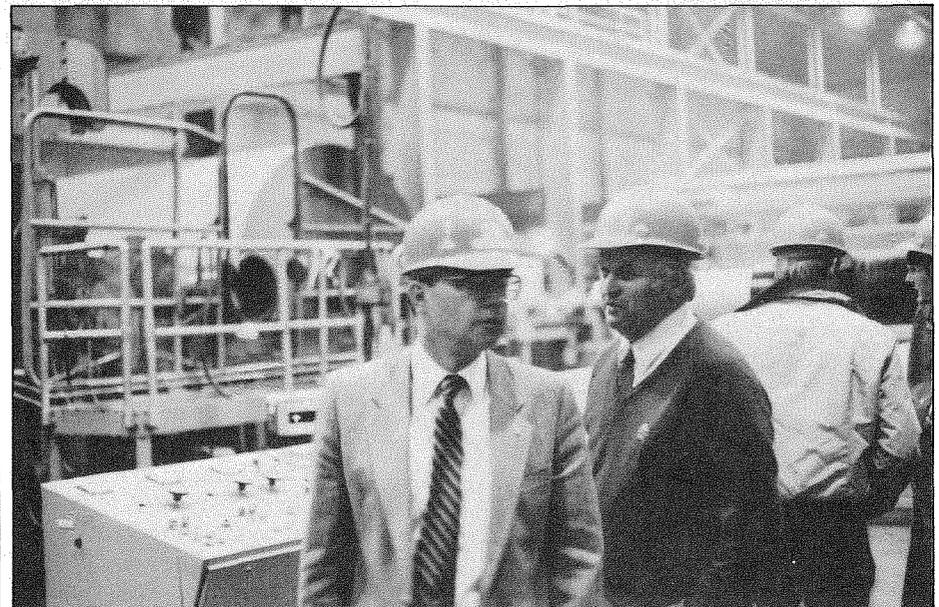
The idea is to preserve cogeneration opportunities. While the resource is currently not needed in the region, cogeneration could be developed now for the California market. Then, if it were later needed in the region — which would occur in the next decade in both the Council's medium-high and high energy demand forecasts — it would be available.

However, unless developers see a current opportunity for selling cogenerated power, which the California market would provide, they are unlikely to develop the resource. The Council feels strongly that "priority wheeling (the transmission of power from one system to another) service" should be granted over the intertie for cogenerated power.

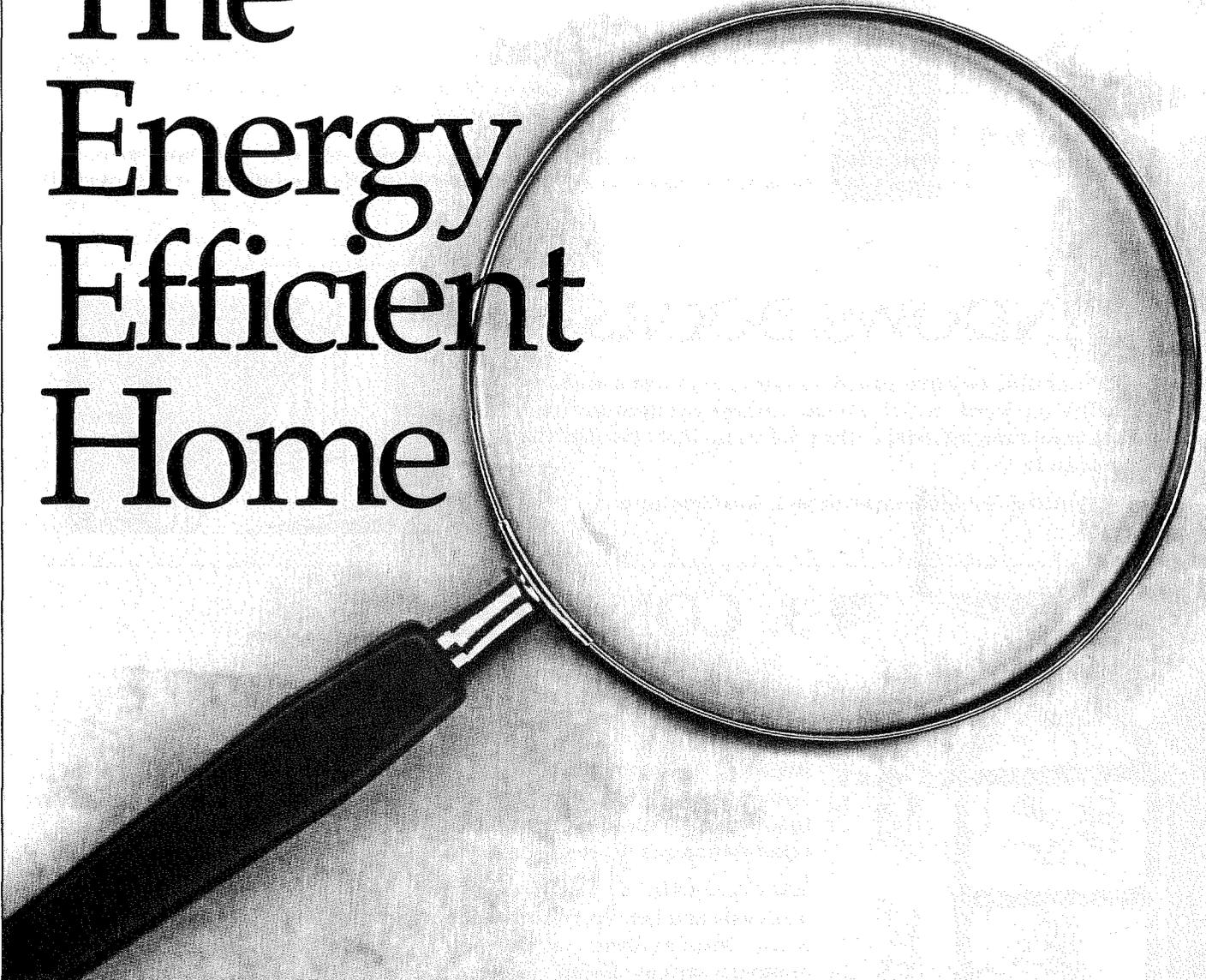
While these concerns were directed at the near-term policy which would run through August 1986, Council members also have the long-term policy in mind. As one public commenter at the Kalispell meeting put it, "You always run the risk that the short-term policy will just roll over into the long-term policy." ■ —Editor

## About the only thing that isn't controversial about the Intertie Access Policy is its name.

Montana Council members Gerald Mueller, top photo, and Bob Saxvik, lower photo on right, visit Champion Pulp Mill in Frenchtown, outside of Missoula, as a possible cogeneration site. The mill, which produces paper and cardboard, is considering utilizing waste heat to produce electricity.



# Tips for Spotting The Energy Efficient Home



by Mickey Riley

**S**ince the mid-1970s, public awareness about energy costs has risen dramatically. One of the most obvious results was a shift from large gas guzzlers to smaller fuel-efficient cars. Today, consumers are becoming equally sophisticated about the energy consumption of the homes they buy.

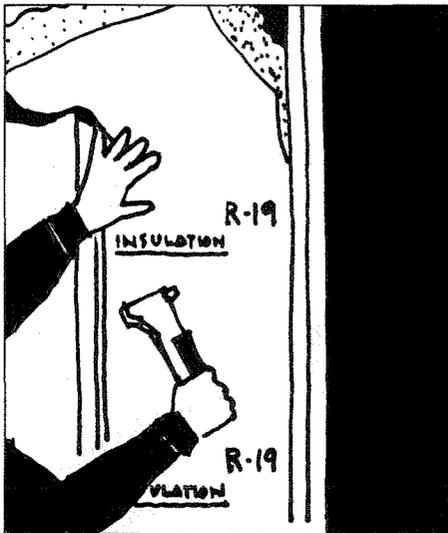
Yet there exists no tool or criteria, such as the federal EPA mile-per-gallon rating, to aid the consumer in determining if the

new home advertised as energy efficient is truly just that.

What follows are some general criteria to help new homebuyers evaluate whether the home they plan to buy is energy efficient. The criteria, based on the Council's Model Conservation Standards, apply to electrically-heated homes.

It should be noted at the outset that there are many designs and methods that can be used to achieve an energy efficient home. Designs using solar gain (a home

with major south-facing window areas) or passive solar (southern orientation and some system to store the solar energy such as tile or brick floors or walls) as well as homes employing heat pumps could require less insulation than designs without these features. The geographic location of the home also determines the amount of insulation necessary with greater insulation required in colder climates. Buyers can contact their local or state energy office for details specific to their climate zone.



# 1. INSULATION

All insulation has an R-value which is its resistance value — the higher the R-value the greater the resistance to heat flowing out.

**WALLS:** no less than R-19 — this can be determined by looking at the depth of the window sills and frames which tell you how thick the walls are.

**CEILING:** no less than R-30 — look for one foot of blown or batt insulation in the attic.

**FLOOR:** no less than R-19. You may be able to determine this by looking for at least six inches of insulation in the unheated basement ceiling or in the crawl space.

**SLAB:** if the home has a basement, look for two inches of rigid foam around the inside or outside perimeter (or ask the builder, if it's covered).

# 2. WINDOWS/DOORS

**WINDOWS:** double or triple paned windows with either wood frames or "thermally-improved" metal frames. Thermally improved frames incorporate insulating material within the frame that "breaks" the flow of heat through it.

**DOORS:** insulated core doors and/or well weatherstripped.



# 3. CONTROL OF AIR LEAKAGE

**CAULKING AND WEATHERSTRIPPING:** look for caulking where the frames of the doors and windows meet the siding, and weatherstripping (vinyl, metal, or foam rubber) where the windows and doors connect with their frames. This attention to detail indicates a builder who is conscientious about energy efficiency.

**VAPOR BARRIER:** vapor barriers protect the home against moisture problems and greatly minimize the amount of air leaking in and out of a home. Some builders may use a continuous (sealed where necessary) piece of plastic such as six-mil visqueen to "wrap" the house. This should be carefully sealed where there are breaks for plumbing and electrical outlets. Other methods include the use of rigid two-inch styrofoam that is sealed or taped where penetrated by nails, or foil-face batts with the seams overlapping.

# E - N - E - R - G - Y

This checklist can serve as a good, somewhat generic, guide to determining if a home has the technical features to make it energy efficient.

Equally important is buying from a reputable and experienced builder. A

reputable builder should be able to give you names of past clients who have actually lived in these homes and whose energy bills prove the home's efficiency.

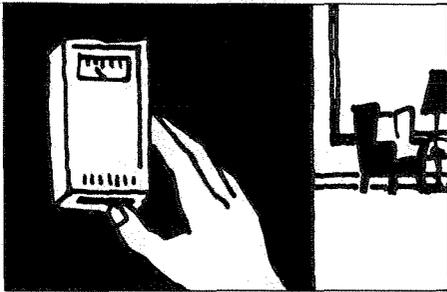
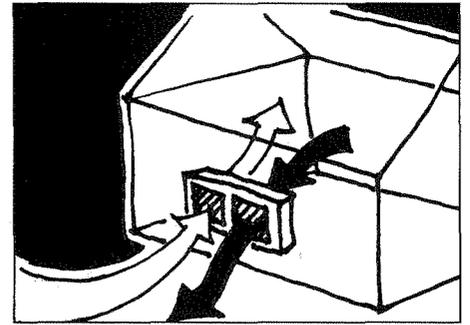
Buying an energy efficient home makes sense from a variety of perspectives. The

most obvious benefit is lower energy bills. While no one knows how much and how fast electrical rates will rise in the future, it's a safe bet they won't go down. Most homes have a useful life of about 60 years. As rates rise, an energy efficient home will

## 4. VENTILATION

**DEHUMIDIFIERS:** are necessary to avoid humidity problems in well sealed homes, or

**AIR-TO-AIR HEAT EXCHANGERS:** for tightly sealed homes. The heat exchanger exhausts stale indoor air while transferring its heat to the fresh incoming outdoor air. A heat exchanger is important in a tightly sealed home to ensure indoor air quality. It has the advantage of saving heat thereby reducing energy needs.

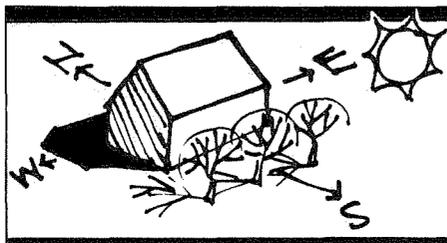
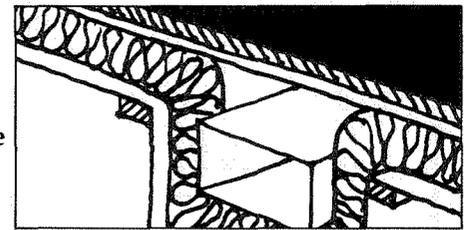


## 5. HEATING SYSTEMS

A well insulated and "tight" home will undoubtedly need a small heating unit. Check with the builder and/or local energy office for size requirements. A heat pump may be a cost-effective investment for large homes. A desirable feature is the use of separate thermostats in individual rooms or for those rooms used infrequently such as a utility room or basement.

## 6. DUCTWORK

In a well insulated and "tight" home, it makes more sense to have the ductwork within the living area and left uninsulated. If the ductwork is outside the living area (such as garage or basement), be sure it is insulated.

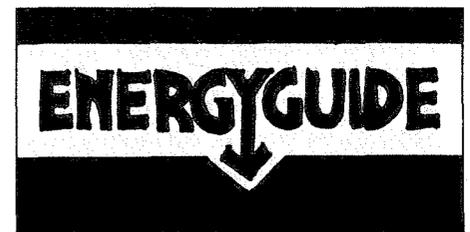


## 7. ORIENTATION

A home that has most of its windows on the south (and unshaded) side and very few windows on the north side will obviously benefit from solar gain — even in the often overcast Northwest. Some attention should also be paid to shading these windows (deciduous trees, overhangings, or awnings) in the summer to avoid overheating.

## 8. APPLIANCES

These products are now efficiency rated and consumers should look for the seal on refrigerators, washers, dryers, dishwashers, and other appliances indicating their energy efficiency rating. Also check product literature and warranties.



# C - H - E - C - K - L - I - S - T

have greater resale value than an inefficient home.

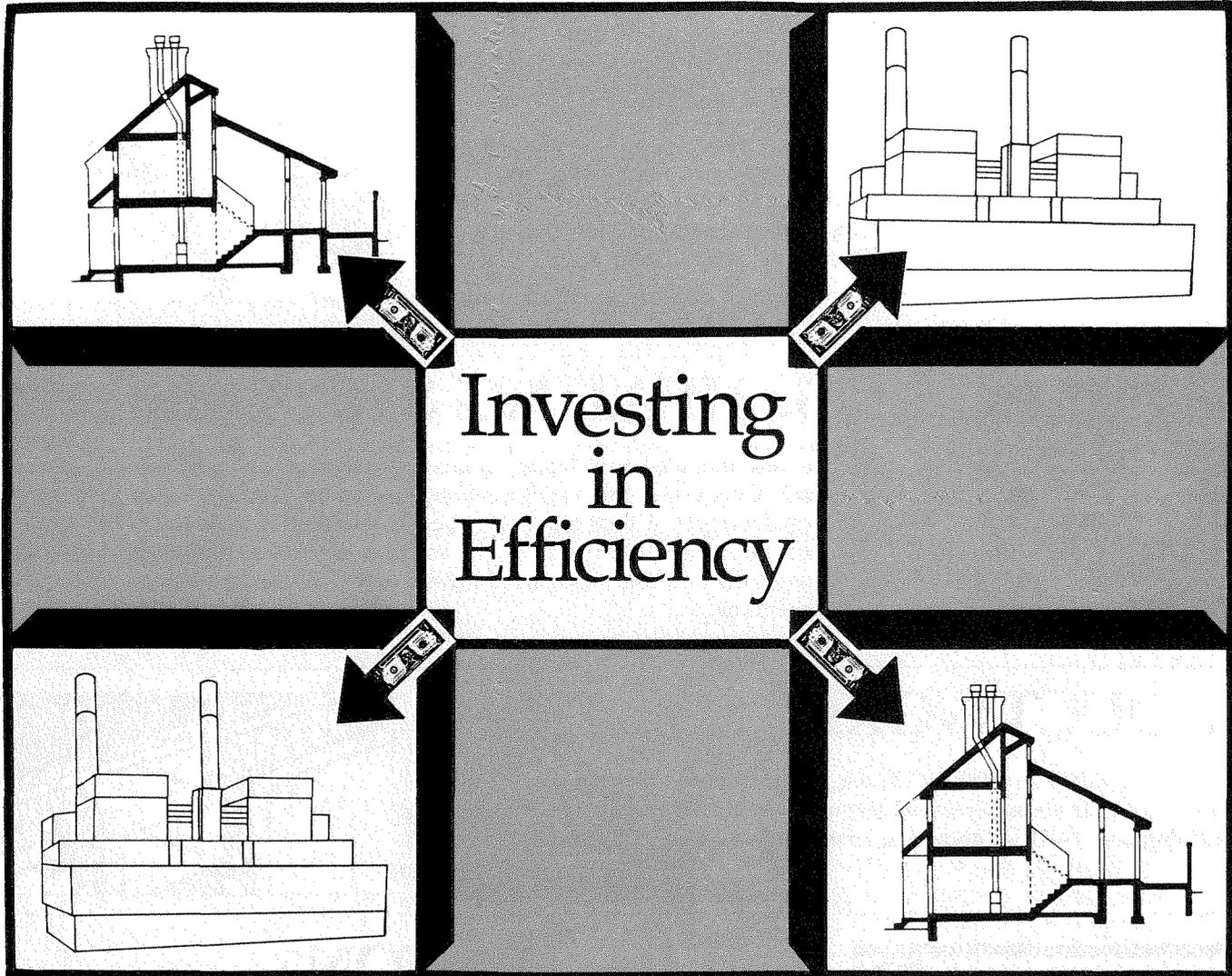
There is also the issue of comfort. Well insulated homes are more comfortable because they have fewer drafts, they maintain an even temperature, and are cooler

in the summer. They are also quiet homes.

Moreover, the investment in an energy efficient home actually benefits every ratepayer in the region by reducing the demand for power on local utilities. As more new buildings are made energy effi-

cient, fewer utilities will have to turn to more expensive energy resources which drive up everyone's rates.

Buying an energy efficient home is a good choice from the standpoint of economics, comfort, and the future. ■



## Investing in Efficiency

by Carlotta Collette

**D**uring the next two years people throughout the Pacific Northwest will be asked to adopt building construction codes based on standards that set limits on the amount of electricity new homes should use for space heating. These new "model conservation standards," part of the Northwest Power Planning Council's power plan, establish what are being called "energy budgets." They are designed to save enough electricity in the Northwest, so that the need for new coal, oil or nuclear fueled electric power plants will be substantially reduced.

The electricity that will be saved by implementing these new building standards will cost the region (and thus the ratepayers) about half of what new coal plants would cost for an equivalent amount of energy. If the region is forced to build new power generating plants, regional electric bills will go up fast. Even without adding new electric plants the cost is almost certain to rise.

New energy conserving standards will do more than help soften the rise in rates over the long run. They will also help the ratepayers in these new, extremely well insulated homes. Homes built to the model conservation standards will use 60 percent less electricity for space heat than homes built to current building codes. That means utility bills that are much lower than they would otherwise be.

It sounds like a good deal, and it is. But, there is still no such thing as a "free lunch." To add the kinds of conservation features that the standards will require might raise the construction costs on a house in a particularly cold part of the region by as much as \$4,500. In milder parts of the region, the costs to add super conservation to a new home during construction will average around \$2,500. Costs will vary from builder to builder, and some homes that meet the new standards have even been built for less than current code houses.

Nonetheless, there is some concern that the addition of \$2,500 or \$4,500 to the overall cost of a new home will push some first-time homebuyers out of the market. In fact, adding that amount may delay a person's purchase of a home long enough for them to save the additional \$375 to \$675 that would be added to the down payment and closing costs (using an average down payment of ten percent and closing costs of five percent). It should not, however, exclude them from the market. The total increase in up front costs is less than the probable first month's payment on the mortgage. The purchaser could wait a few months, save the money that would have gone to the house payment, and then be ready to buy.

An alternative would be to negotiate with the lending institution to pay a smaller percent down (keeping the same effective down payment, but still slightly higher closing costs) and amortize the difference over the life of the loan.

## SHELTER INDUSTRY PROGRAM PARTICIPATING LENDERS

The shelter industry in the Northwest has suggested a third alternative for those cases where the additional \$2,500-\$4,500 makes the new home appear unaffordable. Lending institutions recognize the advantage of incorporating the positive cash flow provided by lower heating bills into the formula for calculating overall housing affordability. Working with the Western Resources Institute in Seattle, they have developed a program for estimating the energy savings of houses.

It's called the Uniform Energy Rating System, and with it banks can compare the cost of buying a home with the costs of operating one. Typically, banks figure how much a person can afford to spend on housing by balancing that person's debts (including the new mortgage) with their income. Homes that conserve energy save their owners money. With the rating system, these savings can be weighed against mortgage payments when the bank is considering approving a loan for that home.

The program has caught on in Washington, particularly in the Seattle area. The Federal Home Loan Mortgage Company ("Freddie Mac") and the Federal National Mortgage Association ("Fannie Mae") have both endorsed the program. They are encouraging their lenders to increase the loan-to-debt qualifying ratios for potential buyers of energy efficient homes.

James R. Faulstich, president of the Federal Home Loan Bank of Seattle, wrote to Oregon lending institutions to urge them to adopt the program for their home loans. "Lenders and others in the housing industry need to be concerned about the ability of American homeowners to pay their energy costs," he wrote. "These increasing costs threaten the ability of American homeowners to keep up their mortgage payments. Reduced energy costs," he adds, "make homeownership possible for more people, and home improvements that save energy can finance themselves."

Using the rating system has enabled banks in Seattle to increase their loan approval rates by 3-5 percent. Several banks in Oregon have made policy decisions to implement the program, and banks in Montana and Idaho are currently studying it.

As more and more lending institutions begin to adjust their practices, more and more homeowners in the region will be able to take part in the best energy buy around. As more and more homes are built to the model conservation standards, the region will be acquiring the most flexible and least expensive energy resource available — efficiency. ■

As of August 1, 1984, the following lenders had made policy decisions to participate in the Shelter Industry Program. Several are currently lending money using the Uniform Energy Rating System; others are scheduled to begin soon. Contact the underwriting department in the offices listed below for current information on the program status.

### **American Savings Bank**

P.O. Box 2037  
Tacoma, WA 98401  
206/272-8305

### **Bancshares Mortgage Company**

P.O. Box 3277  
Bellevue, WA 98009  
206/455-6603

### **Bank of California**

910 Fourth Avenue  
Seattle, WA 98164  
206/587-6100

### **Bank of California**

P.O. Box 3121  
Portland, OR 97208  
503/225-3636

### **Deseret Pacific Mortgage**

P.O. Box 58990  
Seattle, WA 98188  
206/575-8011

### **Fairchild Mortgage**

P.O. Box 33670  
Seattle, WA 98133  
206/367-9470

### **Great Western Union Federal S&L**

11210 S.E. 8th  
Bellevue, WA 98009  
206/451-2060

### **Old National Bank**

P.O. Box 1787  
Seattle, WA 98111  
206/447-2878

### **Pacific First Federal**

11 Pacific Avenue  
Tacoma, WA 98401  
206/383-2511

### **Peoples Bank**

P.O. Box 720  
Seattle, WA 98111  
206/344-3690

### **Peoples Mortgage Company**

P.O. Box 1788  
Seattle, WA 98111  
206/344-4672

### **Pioneer First Federal S&L**

P.O. Box M  
Lynnwood, WA 98046  
206/622-9865

### **Premco**

P.O. Box 97018  
Bellevue, WA 98009  
206/462-7111

### **Prudential Bank**

1100 Third Avenue  
Seattle, WA 98101  
206/382-7500

### **Rainier Financial Services**

P.O. Box 990  
Seattle, WA 98111  
206/621-5311

### **SeaFirst Mortgage**

Fourth & Blanchard Building  
Sixth Floor  
Seattle, WA 98121  
206/583-7078

### **United Bank**

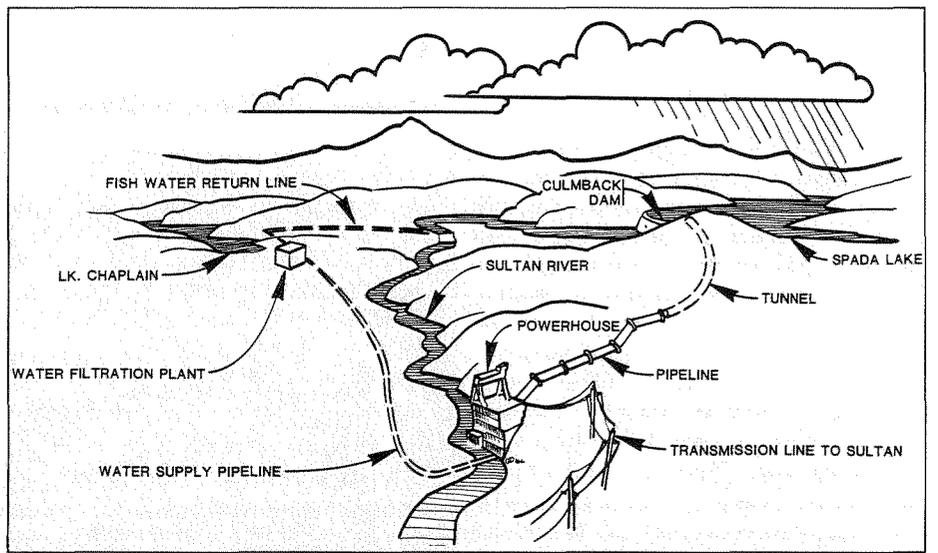
P.O. Box 1637  
Tacoma, WA 98401  
206/572-5220

### **Washington Mutual Savings Bank**

P.O. Box 834  
Seattle, WA 98111  
206/464-4400

### **Westside Federal S&L**

P.O. Box 66220  
Seattle, WA 98166  
206/244-4950



## Cutting Cleanly Through the Wilderness:

**T**here's a great compromise made every time a new hydroelectric project is developed. By definition hydro projects go where there's moving water, and, more often than not, moving water finds its way through some beautiful countryside. Hydroelectric projects usually require dams. To build a dam the river must be diverted and the land around it can be seriously damaged. Trees are cut away, earth moved, wildlife habitats disrupted and fish runs cut short. That's often the bargain made, a tradeoff of resources, wilderness for electricity.

That bargain was cut more cleanly at the recently dedicated Henry M. Jackson Hydroelectric Project on the Sultan River in western Washington. As a result of the effort and care put in for the environment and ecosystem, the project was given the 1984 Environmental Excellence Award by the Washington State Ecological Commission.

There are few more beautiful patches of countryside than the area of the Sultan River in the foothills of the Cascade Mountains. But, the Sultan Basin is also a perfect site for hydro development. The basin is a diamond-shaped bowl with a narrow gorge at its base, and it receives an astounding 11 feet of rainfall each year.

That combination proved irresistible as early as 1917 when the nearby city of Everett, Washington obtained permission to divert some of the Sultan to provide drinking water. The city built a dam and redirected some of the river through a tunnel into Lake Chaplain, the site for the city's water storage.

After World War II, when the rest of the Northwest's hydro potential was being developed, the Snohomish County Public

Utility District secured permission from the Federal Power Commission to study the basin for hydroelectric possibilities.

That led to an application for a hydro license in 1957, and a two-phase plan to develop the river for both additional water supply and electricity. Phase I led to the construction of 200-foot high Culmback Dam, creating the Spada Lake reservoir for additional water storage in the basin.

Phase II, the electric generating facility, was postponed until it could be more cost effective. When the Bonneville Power Administration filed its warning that there might not be enough power to meet projected regional growth in the 80s, the Sultan River project suddenly appeared not only cost effective, but possibly essential.

The problem then became one of slipping massive earthmoving and drilling equipment into the vicinity of the two drinking water storage lakes, on a river that supports an important fisheries resource and alongside delicate shoreline wildlife habitats, without causing irreparable harm.

The Snohomish PUD called for detailed studies on how to protect the water quality from siltation, pollution from the large amounts of petroleum that would be brought into the area and temperature variations that could endanger the fish. They were also concerned that such a massive undertaking should not permanently scar the landscape.

When contracts were let on the project's construction, the study recommendations were written in and environmental supervisors were hired to monitor the ongoing work for its attention to the ecology of the area.

The project itself was massive. A four-

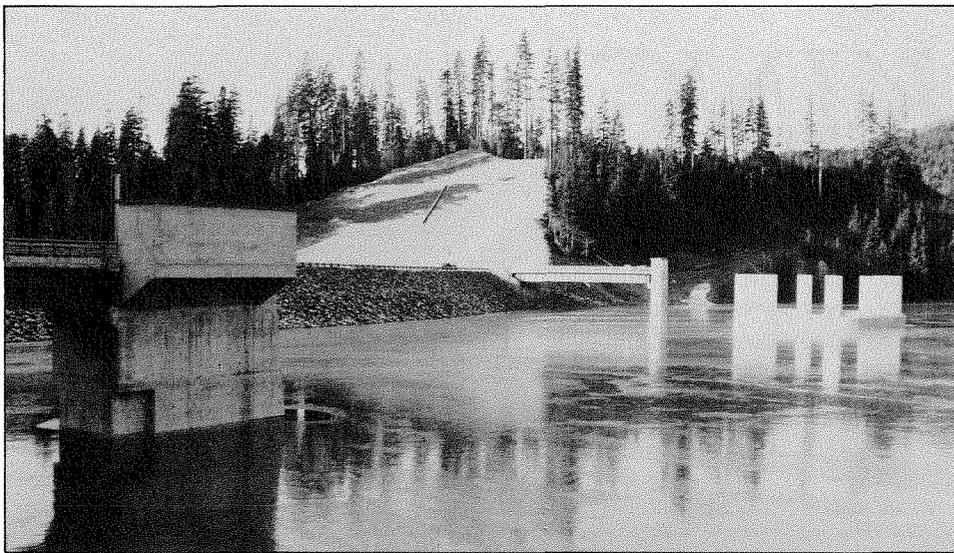
mile long and 14-foot in diameter tunnel was drilled through Blue Mountain. It connects up with a four-mile long buried pipe and the two draw water from the newly enlarged Spada Lake reservoir. Culmback Dam and its spillway were both raised to increase the capacity of the reservoir. The intake structure from there to the tunnel and eventually back to the Sultan River eight miles below the dam was designed so that water can be drawn from different levels depending on the optimum water temperature needed in the river for fish protection.

At the end of this eight-mile pipeline sits the powerhouse, where four turbines generate up to 112 megawatts of electricity, enough to power 20,000 homes. Not finished yet, half of the water from the powerhouse is ducted through yet another four-mile long buried pipe to Lake Chaplain where it is expected to meet the water supply needs of the city of Everett through the year 2020.

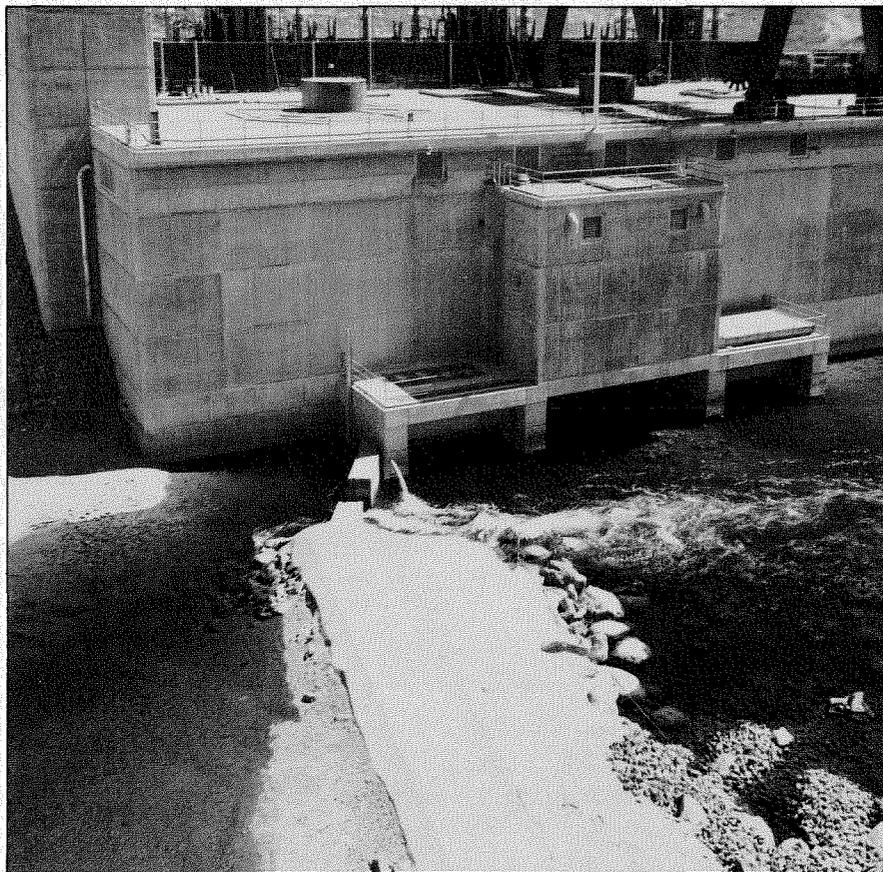
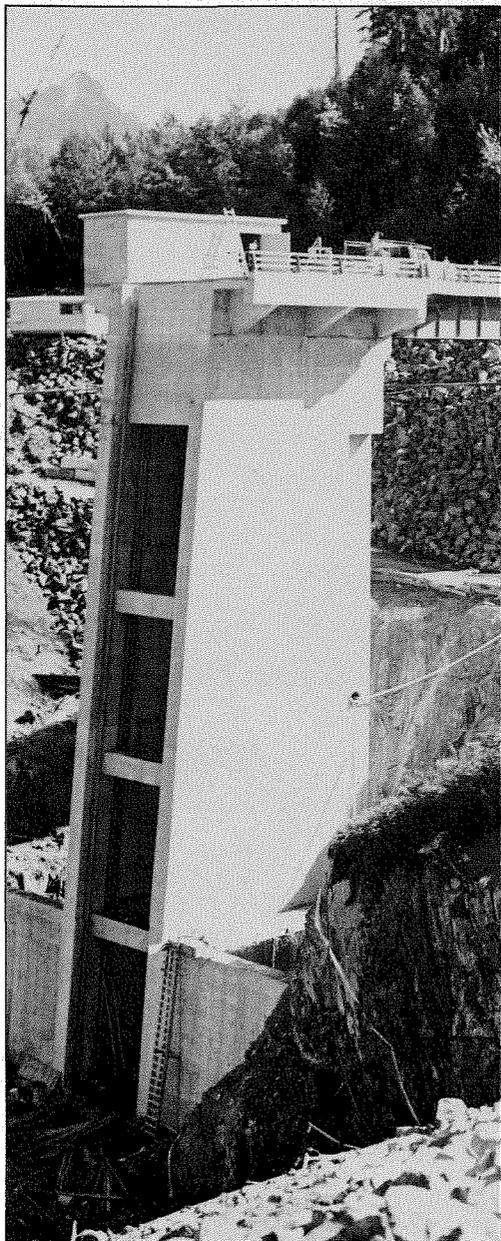
In addition to maintaining a healthful water temperature for the fish, the Henry M. Jackson Project is designed to return water from Lake Chaplain through yet another pipeline to Culmback Dam in order to assure adequate flows for fish rearing and spawning seasons.

Adult fish heading back up the river are guided by an attraction berm near the powerhouse. Without it they might be drawn in by the turbine discharge. Instead, they are led toward the river's own flow.

On June 1, 1984, the Henry M. Jackson Hydroelectric Project began its commercial operation. Perhaps most rare among its accomplishments — it was on schedule and on budget! ■ by Carlotta Collette



## The Henry M. Jackson Hydroelectric Project



Like the tip of an iceberg, the concrete cap of the eleven story water intake structure above Culmback Dam rises only slightly out of the water (top photo). Behind it, in the center of the photo, a terraced cut in the hill reduces the possibility of slides blocking the outlet from the dam.

The whole 110-foot-tall intake structure appears in the photo at left. This design allows water to be drawn from varying depths in the reservoir. Because the reservoir (Spada Lake) was significantly enlarged as the dam was raised, the water temperature at some depths are cold enough to endanger fish. With the choice of three water levels, proper water temperatures can be maintained.

Another fish protection device can be seen in the photo above. Fish migrating upstream tend to head into the fastest flows. To keep them from going towards the turbine outlets in the dam's powerhouse, an attraction berm was built alongside the powerhouse. This berm increases the river's velocity enough to catch the attention of the fish and lure them away from the deadly turbines.

# SPEAKING OUT ON FISH & WILDLIFE

*Mr. Chairman, I have come to comment about amendments to the fish and wildlife program.*

This was repeated in four states this past summer as government officials, fishermen, tribal leaders, industry spokespersons, consumer advocates and fish biologists gathered in meeting rooms throughout the region to tell the Northwest Power Planning Council what they thought about proposed amendments to the Columbia River Basin Fish and Wildlife Program.

Most speakers were overwhelmingly in favor of the program but many had concerns. Some wanted actions deleted, others wanted actions strengthened, while others were not sure what they wanted, only that there was a problem in need of correction. All in all, it was a major example of the Northwest's unique public involvement process. Perhaps no other region's citizens have so much of an opportunity to participate in decisions about a regional resource.

Here is a sampling of some of the comments. The Council members and their staff are currently studying these and other comments and will make a final decision on the amendments in October.

by Ruth Curtis

*First I want to assure you that Public Power supports the restoration of healthy fish runs along the Columbia River system and, second, I want to acknowledge the utility industry's responsibility to help pay for its fair share in rebuilding the fish resource.*

*We would remind you, third, that power production is but one reason behind the fish depletion on the Columbia. Other users have contributed to the depletion and we respectfully suggest that the other users should also help pay the bills.*

*Fourth, we are concerned that any mitigation measures meet two effectiveness tests – cost effectiveness and biological effectiveness. We ask therefore, that any measures you propose not only be the least expensive means to accomplish a stated purpose but that it be the safest and most efficient means.*

DAN OGDEN, PUBLIC POWER COUNCIL  
VANCOUVER, WASHINGTON





*. . . Implementing the Yakima River passage improvements has proven more difficult than many of us thought. The many roadblocks which surfaced following adoption of your program appear to have finally been overcome and needed improvements can now proceed. We accept the schedule developed for implementation that appears in the draft action plan and will actively work to ensure this task proceeds in a timely fashion. Your oversight of implementation must continue.*

WILLIAM YALLUP, YAKIMA INDIAN NATION  
TOPPENISH, WASHINGTON

*Well, gentlemen, I have come here today to enlist your aid in pushing drugs. I would enjoy seeing more of our young people have the opportunity to become addicted. The only thing is, the drug I'm referring to is not heroin, or cocaine or marijuana, it is fishing. It's addictive all right, but it's a positive addiction . . .*

*I believe that money spent on improving or promoting fishing or hunting is an investment, an investment that repays itself many times over in dividends to society.*

JACK TENTOR, THE FISHERMEN OF THE SEVEN BAYS AREA  
LAKE ROOSEVELT, WASHINGTON

*Many fishery improvements are getting underway. Some are being accomplished, such as removing barriers to natural spawning grounds, improving habitat, providing acclimation ponds. Bank vegetation and stabilization work are all effectively being accomplished. And we agree that more needs to be done to restore the anadromous fish runs. Our concern, as I say, lies in the capital expenditures costing millions of dollars without adequate analysis of the benefits of their costs relationship.*

JOE BREAZEAL, ALUMINUM COMPANY OF AMERICA  
VANCOUVER, WASHINGTON

*There was only one amendment in the process that directly affected Montana. . . . and that affected the Painted Rocks or the proposed purchase of water from Painted Rocks Reservoir in the Bitterroot River. . . .*

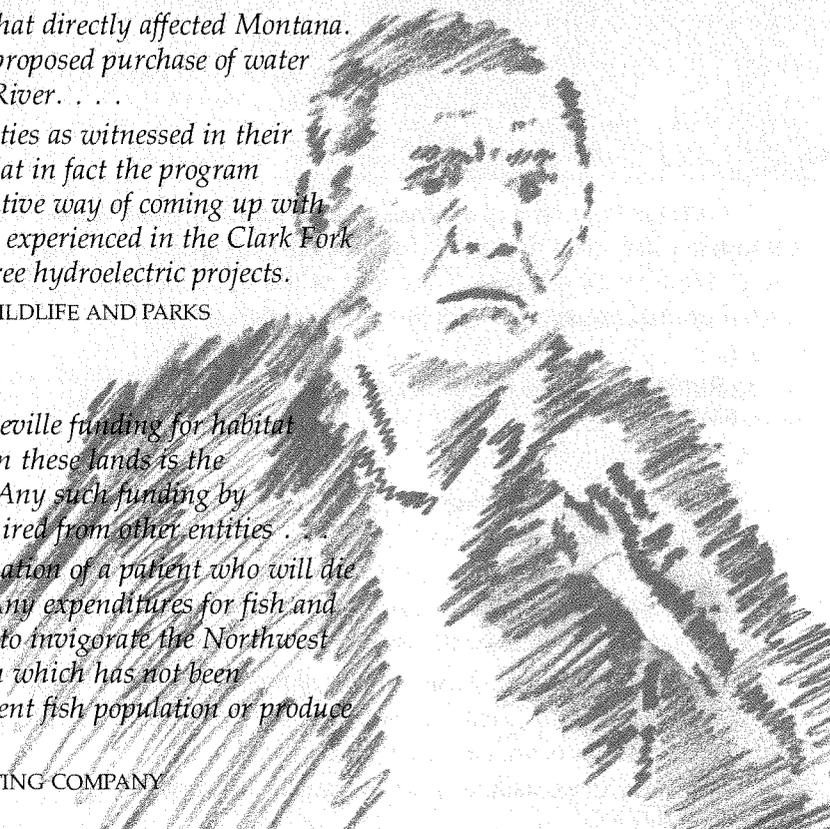
*Our frustration lies in the resistance of the utilities as witnessed in their submission of the amendment and requesting that in fact the program measure be dropped. Yet, they offered no alternative way of coming up with mitigation for the losses of migratory fish we've experienced in the Clark Fork Basin as a result of the construction of those three hydroelectric projects.*

PAT GRAHAM, MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS  
HELENA, MONTANA

*We are very concerned about proposals for Bonneville funding for habitat restoration on federal lands. Protection of fish on these lands is the responsibility of the controlling federal agency. Any such funding by Bonneville would be in lieu of expenditures required from other entities . . .*

*. . . The Columbia River system is not in a situation of a patient who will die if an experimental operation is not performed. Any expenditures for fish and wildlife measures takes funds away from efforts to invigorate the Northwest economy, and a large-scale change to the system which has not been adequately tested might cause the loss of a resident fish population or produce other unforeseen consequences.*

LEAYESH JOHNSON, PACIFIC NORTHWEST GENERATING COMPANY  
PORTLAND, OREGON





*Now, Idaho's troubles will be over if we can harness the dams all the way along. I mean harness them, put the bridle on them and the whole business, the front and the back of those dams, so no fish can get through into the turbines.*

CAROLINE JOHNSTON  
MISSOULA, MONTANA

*If you could have seen the Columbia and Indian fisheries that existed on the Colville Reservation prior to Grand Coulee and Chief Joseph Dam, you could better understand the frustration, the feeling of utter loss of the Colville people as they have seen those fisheries wiped out forever. . . . the tribe has sought to mitigate their losses caused by Grand Coulee and Chief Joseph Dam on the Upper Columbia River (by) the development of a resident fish hatchery. . . .*

*. . . . The Colville tribes have waited a long time to see the reality of fish once again on the reservation. For that reason I come before you today to pledge whatever technical, political and other assistance to Bonneville Power, Corps of Army Engineers, or to any participating agency or government on behalf of the Colville Confederated Tribes.*

ANDREW JOSEPH, COLVILLE CONFEDERATED TRIBES  
NESPELEM, WASHINGTON

*We will work with the agencies as long as their requests and the reports, both the mitigation status reports and the mitigation plans, if any, for company facilities are reasonable and the evidence clearly indicates that construction and/or operation of the company facilities has adversely impacted wildlife. The company does not believe it should be a party to unnecessary studies or the spending of ratepayer money without clear and unequivocal evidence that the construction and operation of the company facility has adversely impacted wildlife.*

DONALD BARCLAY, IDAHO POWER COMPANY  
BOISE, IDAHO

*. . . . It's always been kind of a paradox to us that there has been so much emphasis on the ocean fishery and such little emphasis on the lower river fishery. We are very gratified to see that in the new amendments there are some additional measures which specifically address the lower fishery harvest.*

MONTE RICHARDS, IDAHO DEPARTMENT OF FISH AND GAME  
BOISE, IDAHO

*The Commission is pleased that the Council includes habitat improvement projects as a major component of the program amendments. We are also pleased that the Council will accept recommended measures for some upper river systems such as the Clearwater in Idaho, and that it is moving forward with long overdue projects in the Wenatchee and Similkameen drainages.*

*We are troubled, however, by the number of rejected habitat measures, particularly those in the Umatilla and Grand Ronde River systems. Many of these proposed projects are biological necessities.*

ALLEN PINKHAM, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION  
PORTLAND, OREGON





*Speaking of court actions, early in the Fish and Wildlife Program development our attorney, Howard Arnett, explained to the Power Council that the Warm Springs Tribes looked to the program as an alternative to costly and divisive litigation.*

DELBERT FRANK, CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION  
WARM SPRINGS, OREGON

*I'm very concerned about Section 504 . . . which regulates juvenile migrating salmon and steelhead, and I think it very important that this section of the draft amendment document be adopted by this Council.*

ROBERT PEEBLES  
CANBY, OREGON

*We agree in principle that a high priority should be accorded to achieving increased survival levels of juvenile anadromous fish as they migrate to the sea in the Columbia River Basin. We are concerned that the proposed method of prioritizing through inclusion of the five-year action plan as a specific program measure may be counter-productive . . .*

*. . . The Corps will have difficulties in implementing all the measures proposed for Corps action in the five-year program because of budget constraints.*

COLONEL JAMES HIGMAN, U.S. ARMY CORPS OF ENGINEERS  
PORTLAND, OREGON

*. . . The long-term goal of the Fish and Wildlife Program should be to restore the anadromous fish runs of the Columbia River to pre-hydro power amounts taking into consideration, of course, losses from other causes not related to hydroelectric development.*

JIM SOFRA, PACIFIC FISHERIES ENHANCEMENT CORPORATION  
FLORENCE, OREGON

*The proposed measure 804(e)(8) more clearly defines the status of white sturgeon in the program. These fish become increasingly more important to the fisheries of the basin. Relatively little is known of their life history, habitat needs, and stock strength. Studies now possible under the language of this measure should prove invaluable in the restoration and enhancement of this resource.*

LLOYD PHINNEY, WASHINGTON DEPARTMENT OF FISHERIES  
OLYMPIA, WASHINGTON



*In Bonneville's view, perhaps the most notable among the amendments of the proposed Fish and Wildlife Program are those which incorporate new approaches to program implementation, . . . most particularly, the five-year action plan which institutes schedules, periodic reporting to the Council, and the development of the implementation work planned by Bonneville and others.*

*We recognize that these will impose a substantial burden on . . . BPA and we also recognize that they will tend to blur the respective planning and implementation roles of the Council and Bonneville.*

JANET MCLENNEN, BONNEVILLE POWER ADMINISTRATION  
PORTLAND, OREGON

## COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council.

- Northwest Power Planning Council's Fourth Annual Report
- Power Plan Amendment for Program Design 1E
- Power Plan Amendment for Action Item 14.1
- Proposed Amendment and Issue Paper on Surcharge Methodology
- Staff Working Paper on Issues in Economic & Demographic Forecasts
- Status Report on Regional Economy and Loads
- Issue Paper on the Value of Increased In-Region Sale of Interruptible Power

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