

Volume 7, No. 3

May/June 1988

NORTHWEST ENERGY NEWS

Northwest Power Planning Council



CONTENTS



3 Ruling the River

How the Columbia River is managed—even during a drought.



7 Protected Areas Issue Open for Comment

Council moves to designate streams needing protection from hydroelectric development.



10 He's Howard of Howard's Grocery

His may very well be the most energy-efficient grocery in the world, and Howard Williams is very proud of the status.



13 Interview: Morris Brusett

Northwest Power Planning Council chairman from Montana.



19 Bringing Up the Bottom Line

Conservation in the commercial sector requires more than just better building codes.



22 Corps Dams Flow of Fish Funds

Funds set aside by Congress to speed construction of bypass systems at Northwest dams are held up by the Corps.



25 The Affordable Home

New mortgage application forms help lenders figure energy savings in new home loans.



28 Agreement Reached in Fisheries Feud

An historic settlement aims to rebuild fish runs and harvests in the Columbia River Basin.

Editor's Notes

The spring chinook run on the Willamette River, just below our office, is the stuff from which legends are made. In 1960, the Willamette run numbered only about 24,000. Polluted water, hydroelectric dam operations and other causes had cut the run by more than three-quarters off the best years in the 1950s.

Oregon's Willamette clean-up effort, improved and increased hatchery releases, new operating regimes that enable young chinook migrants to safely pass the dams and improved harvest controls because of the U.S./Canada Pacific Salmon Treaty, have all contributed to this year's being the second highest run on record—estimated to total 97,000 fish by the end of the season. These are the days they will speak of when they tell how you could walk across the Willamette on the backs of anglers, stretched gunnel to gunnel awaiting their catch.

In this issue there are several new contributors, including representatives from the Council's legal division, John Volkman; and our new government affairs director, Steve Crow. Other stories came from one of the Council's Montana staff, Danny Parker (who has, since writing this, moved on to a new job in Cape Canaveral, Florida); and from Portland Energy Conservation, Inc. writer, Judy Branham.

Cover illustration is by Portland artist Jerry Kruger.

30 Shorts

31 Calendar

RULING THE RIVER



"The river is a strong brown god, sullen, untamed, intractable, patient to some degree, at first recognized as a frontier; useful, untrustworthy as a conveyor of commerce..."
T.S. Eliot

by Ruth L. Curtis

The Columbia River is indeed a strong brown god in the Northwest — useful but untrustworthy. It gives life to salmon and other creatures, provides

electricity for homes and industries, gives nourishment to crops, conveys commerce through the mountains, offers pleasant weekends of playing, and only

occasionally floods the land.

Fish, power, agriculture, transportation, recreation, flood control — all depend on the river.

These often competing uses make management of the Northwest's river system a fine, ongoing balancing act. Occasionally that balancing act is severely tested, as in low water years when the river again proves just how untamed and untrustworthy it actually is.

The Columbia River no longer flows freely as it descends from the mountains to the ocean. A few decades ago, dams turned it into a series of lakes with only a few remaining free flowing stretches. To make the river useful and safe, these lakes are now managed for society's needs, not according to the river's whim.

Over 200 water control projects dot the Columbia River Basin, subduing the water rushing through the system. Some of these are in Canada, and most are rather small. There are 19 major dams on the main sections of the river system in the United States. Most of these are "run of the river" dams with only a limited capacity to control the flow of water, while a few, such as Grand Coulee in northeastern Washington or Dworshak in Idaho, are storage dams with large reservoirs to hold water from one season to the next.

This stored water is needed roughly a third of the time to produce hydroelectricity; otherwise, the river's natural flows provide enough water to turn the generators. It is in the winter months, when the snowpack is building in the mountains, that this storage is used. It is then replenished during the bountiful spring runoffs from April to July.

Most of the actual rules of operation for the reservoirs at the hydroelectric dams are governed by the Pacific Northwest Coordination Agreement, which 15 major Northwest utilities, the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers and the Bonneville Power Administration signed in 1964. Running until 2003, the agreement coordi-

Over 200 water control projects dot the Columbia River Basin, subduing the water rushing through the system.

nates the seasonal operation of each reservoir to ensure that the most use is made of the collective reservoir storage system.

For the reservoir system, the year runs from August 1 to July 31, and each season has its own activities. Reservoirs are typically full as the water year begins. During the fall and winter months, there is little water streaming into the reservoirs because the snowpack is building in the mountains, although some water does come from rain. However, the reservoir is being emptied or "drawn down" because the colder and shorter days increase the Northwest's need for electricity. In addition, the reservoirs are being emptied in preparation for spring when the situation changes.

In the spring, the snowpack melts, producing a large inflow to the reservoirs. To prevent floods, much of this runoff must be collected in the reservoirs. Electricity use decreases, so less water needs to be released from the reservoirs. Some water, however, is released for the fish. These flows for fish are called the "water budget." They speed migrating juvenile salmon and steelhead to the ocean just as the spring runoff did before the river became a series of lakes.

By the end of the water year — July 31, the reservoirs should be full again and the system should be ready to enter the fall and winter months. Unfortunately, in drought years like this year the reservoirs don't necessarily fill up.

Throughout the year, there are operating levels or "rule curves" that must be considered at each reservoir for the system to work. These curves are developed every year under the coordination agreement and take into account the weather and the expected demands on the river system.

The "flood control curve" acts as a ceiling, telling operators how far down the reservoirs must be to have space for the flood waters that will come from the melting snowpack. This curve varies each year, depending on how much snow there is in the mountains. The "variable energy content curve" or "refill curve" tells operators how far down they can take the reservoir and still expect to refill it by July 31. And the "critical rule curve" is the level to which reservoirs can be drawn to produce guaranteed or "firm" hydroelectricity. In a series of very low flow years, operators are entitled to draw down to this critical rule curve to meet their obligations, even if the reservoirs will not be able to refill.

The critical rule curve is based on the so-called "critical period": an actual historic sequence of drought — 1929 to 1932 — that ushered in the dust bowl years. This was the worst drought on record. According to Wally Gibson, the Northwest Power Planning Council's manager of system planning and rates, what the curve implies "is that if you have a recurrence of that sequence of water years, you will just get from full to empty over the course of the four years using the entire storage system and the entire natural flow. And that determines the amount of hydroelectricity an operator is entitled to generate."

This critical period dominates power planning on the river system. By superimposing this driest series of years with today's river system, planners decide how to operate the system. The Bonneville Power Administration uses the following analogy to explain how critical water planning works:

"Imagine that you run a wholesale produce business. What your grocer and restaurant cus-

tomers value is your ability to guarantee them a constant supply of produce.

However, in some years your crop is large; in other years it's small.

Further, let's say that you pride yourself on reliability.

You recall a handful of seasons in the past when your crop was extremely small; you wish to guarantee to supply only the amount you could have supplied during that bad stretch.

Your logic is simple: if you never allow your-

self to guarantee more than you could have supplied in the bleakest period of your past, you can be virtually certain that you'll always be able to meet your obligations.

"Of course, you pay a price for this 'conservatism.' In years when the crop is better — and it almost always is — you can still sell the 'surplus' on the spot market. But when it can't be guaranteed, the value of the product — to your customers and thus to you — is diminished.

"Of course, you pay a price for this 'conservatism.' In years when the crop is better — and it almost always is — you can still sell the 'surplus' on the spot market. But when it can't be guaranteed, the value of the product — to your customers and thus to you — is diminished.

The so-called "critical period" is an actual historic sequence of drought — 1929 to 1932 — that ushered in the dust bowl years.

guarantee that much more to your customers each month."

The river system operators use reservoirs instead of warehouses and sell electricity produced by water rather than produce. But the principle of ensuring the reliability of the product is the same.

This year is dry despite the spring rains, and the overall water supply outlook for the Columbia Basin is far below normal.



Gibson says, "except for Grand Coulee's Lake Roosevelt, the reservoirs are not expected to refill by July 31, and, in fact, they have been operated below the critical rule curve all year, because the natural flows have been worse than the 1928-1929 flows were. We are currently expecting to end up somewhere between 10 and 20 percent down from full reservoirs.

"Assuming you have no place to store up your merchandise, you could simply look back and find that stretch of seasons when your total crop was smallest, and then promise yourself never to guarantee your customers a supply greater than that worst-case average. If you had a warehouse, you could figure out how much that storage could add to your monthly guarantee, if you rationed out its contents over that bleakest period. And in the meantime, you could

What this means is that there is a possibility that next year the region could be where it was in the second or third year of the historic critical period."

Jim Jura, the Bonneville Power Administrator, recently told Congress that the Northwest was in for a long, dry summer. "Water conditions in 1987 brought about the tenth worst runoff in 61 years, and the current year is shaping up to be even worse ... We almost certainly will start the next operating year without full reservoirs."

Power producers are being conservative in marketing power, but there are no shortages. Gibson says he has found that utility representatives generally believe there is a lot of energy out there to cover power needs for next year.

But the issue is economics, not supply. "No one's lights are going to go out," comforts Jim Litchfield, director of the Council's power planning division. "The message here is that the problem we could experience next year is different from 1977, the last major drought where we ended up 28 percent down from full reservoirs. It is not likely to manifest itself as outages or curtailments, but nevertheless, it could be a problem in terms of economics, if we have to run expensive power plants or purchase high-cost energy."

For fish, things are a bit different. There appears to be little problem in meeting water budget flow requirements in the mid-Columbia River in 1988. The water is already stored in Franklin D. Roosevelt Lake behind Grand Coulee Dam. However, the likelihood of providing water budget flows this spring in the Snake River is not as good. There is not the storage available in that basin — most of the water budget on the Snake comes from natural flows. The April 1 forecast predicted natural flows in the Snake Basin to be only 56 percent of normal.

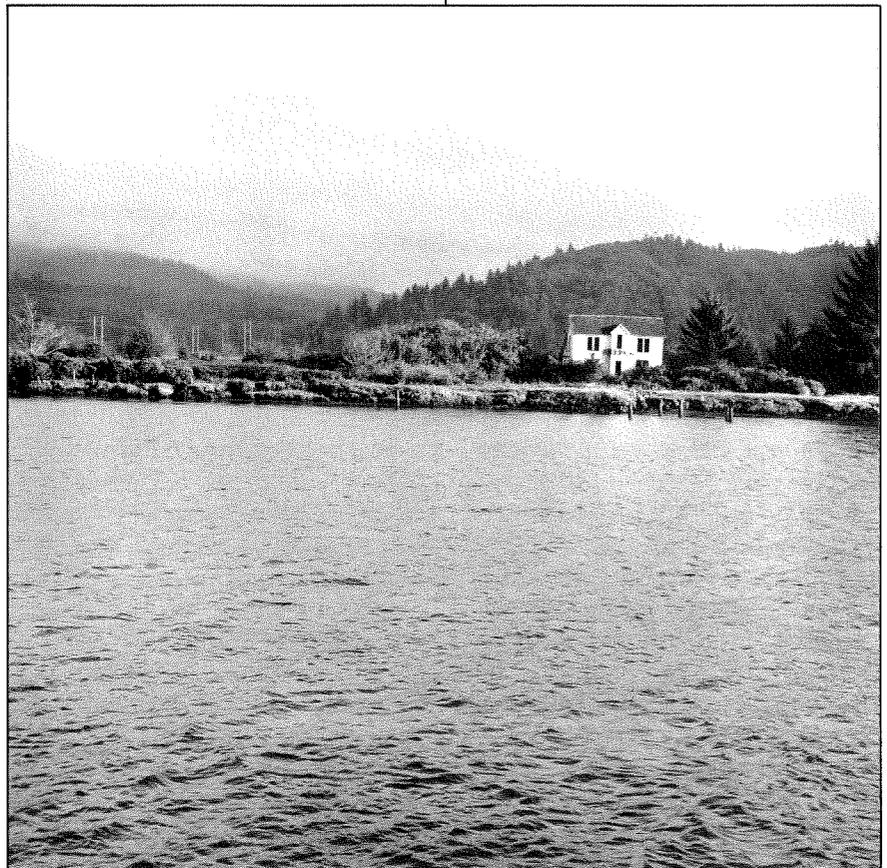
To augment Snake River flows, some water budget storage may be provided from Dworshak reservoir on the North Fork of the Clearwater River. In addition, since the Bonneville Power Administration and the Idaho Power Company have agreed to extend their storage-exchange contract through 1988, additional water budget flows will be provided from Brownlee reservoir on the Snake River.

"Except for Grand Coulee's, the reservoirs are not expected to refill by July 31, because the natural flows have been worse than the 1928-1929 flows were."

Another major program to aid fish migration may also be affected by the low water. At some dams, water laden with juvenile salmon and steelhead is spilled through spillways — rather than released through the turbine units — diverting the young fish away from the powerhouse during the spring migration. This spill is an interim solution until the dams have bypass systems and screens installed to deflect the fish away from the turbine units. The Council's Columbia River Basin Fish and Wildlife Program calls for enough spill to guarantee that 90 percent of the

migrants survive their passage at each dam. In better water years, more spill may be provided. During the 1988 fish passage season, it is unlikely that additional spill, above the minimum 90-percent survival level, will be provided by the Corps of Engineers.

What will happen next year in the river system? The region can only wait and see. Gibson says there is historically a low correlation between water years — only about a 10-percent chance of the dry winter repeating next year. But, because the Northwest typically has low rainfall in the autumn, those who operate the reservoir system won't be able to judge until about November how wet the coming winter will be. Like the river, the region must be "patient to some degree." ■





PROTECTED AREAS ISSUE OPEN FOR COMMENT

by Carlotta Collette

The Northwest Power Planning Council has voted unanimously to release for public review a proposal to protect roughly 40,000 river miles of Northwest streams from future hydroelectric development because they are critical to salmon and steelhead as well as non-seagoing fish and wildlife. The move, taken at the Council's

April meeting in Missoula, Montana, opens a 70-day period during which the Council will hold public meetings in Idaho, Montana, Oregon and Washington to refine the proposal. For copies of the proposal and additional background information see the order form on the back cover.

The Council will also take written comment through July 8,

1988. A final decision on incorporating the proposal into the Council's Columbia River Basin Fish and Wildlife Program is expected in early autumn.

Background

Substantial losses of fish and wildlife habitat have occurred in the Columbia River Basin and in the region as a whole as a result

of hydroelectric development. Dams have blocked passage for migrating fish, flooded both fish and wildlife habitat and caused significant fish mortalities at the dams themselves. Furthermore, disputes over the possible consequences of hydroelectric development add to developer costs and utility rates, and leave the region less certain about its ability to develop new resources quickly, when they are needed.

Six years ago, the Council began a process to identify areas where further development would have substantial and irreversible adverse effects on fish and wildlife. Extensive studies of regional fish and wildlife habitat were conducted from 1984 through 1986, and data bases were developed for anadromous (ocean-migrating) fish, resident (non-seagoing) fish, wildlife and hydropower potential in the region.

Common criteria, modified for each state, were applied to the data to specify critical fish and wildlife habitat for protection from future hydropower development.

In October 1987, the Council released a staff issue paper for public comment, proposing that the Council designate the identified areas for protection from all future hydropower development. More than 400 individuals and organizations responded.

A list of stream reaches proposed for protection has been compiled. In areas where salmon and steelhead and wild resident fish are present, the Council is concerned that any development may involve unacceptable risks of irreparable harm to such fish, their spawning grounds or habitat. In areas where non-wild resident fish or wildlife are present, the Council is proposing that no hydropower development should occur that would result in a net loss of such fish or wildlife.



Effects of Protected Areas Designations

The proposal to designate certain areas of the Pacific Northwest as protected from hydropower development would have its strongest impact through the Council's fish and wildlife program. The current process is expected to result in amendments to the program, which would then influence federal agencies that operate, develop and regulate the hydropower system in the Columbia River Basin. While the Council cannot prohibit development, the Northwest Power Act requires these federal agencies to incorporate the Council's program in their decision making.

The Act requires the Bonneville Power Administration to be "consistent with" the fish and wildlife program and the Council's Northwest Electric Power Plan within the basin. The proposal calls on Bonneville to refrain from acquiring hydropower in protected

areas and to deny hydropower development in protected areas access to Bonneville's intertie power transmission system.

Non-federal hydroelectric development falls within the purview of the Federal Energy Regulatory Commission (FERC), which makes licensing decisions on particular hydroelectric project proposals. FERC must take the fish and wildlife program into account at all relevant stages of its decision-making processes "to the fullest extent practicable."

The current proposal would also result in amendments to the Council's Northwest Power Plan. The plan guides Bonneville's resource acquisitions throughout the Pacific Northwest, not just within the basin.

The proposed amendments apply only to new hydropower projects, not to existing dams. A new hydropower project would be a new structure containing hydroelectric facilities for which FERC has not issued a license.

Existing water rights, water appropriations or jurisdiction over water would not be affected by the Council's decision. Nor will the amendments alter, amend, repeal, interpret, modify or conflict with any interstate compact made by the states.

Regionwide, 40,794 river miles would be affected by the proposed amendments (less than 15 percent of the region's river miles). The Council estimates that of 327 hydroelectric projects currently proposed or under study in the Pacific Northwest, 202 would be affected, representing 688 average megawatts of energy. Another 125 projects, representing 800 average megawatts, would be unaffected.

Four processes for changing the designations have been incorporated into the proposal:

1. Areas included on the protected areas list because of incorrect data or other technical errors could be removed from the list through an expedited amendment process;

2. The Council would promptly review its protected areas designations in light of any state comprehensive river plans, river basin plans or watershed plans, especially in view of individual states' special interest in habitat for resident fish and wildlife;

3. The Council could amend the designations upon completion of its system plan for salmon and steelhead in the basin; and
4. The Council's usual program amendment processes could accommodate other changes in the designations, including consideration of an exception for any hydropower project that is shown to have special fish and wildlife benefits. ■

Public Comment on the Proposal

All written comments must be received in the Council's central office, 851 S.W. Sixth Avenue, Suite 1100, Portland, Oregon 97204, by 5 p.m. Pacific time on July 8, 1988. Comments should

be submitted to the attention of Dulcy Mahar, director of public involvement. Comments should be clearly marked "Protected Areas Comments."

The Council may hold consul-

tations with interested parties to clarify points made in written comments. In addition, the Council will hold the following public hearings:

Richland, Washington

May 11, 7 p.m.
The Hanford House
Vernita Room
802 George Washington Way

Libby, Montana

May 31, 7-10 p.m.
Lincoln County Community
College
Memorial Gym
111 E. Lincoln Blvd.

Coeur d'Alene, Idaho

May 31, 7-10 p.m.
The Coeur d'Alene Resort
Cabin 3

Kalispell, Montana

June 1, 7-10 p.m.
Outlaw Inn
Winchester Room
1701 Highway 93 South

Lewiston, Idaho

June 1, 7-10 p.m.
Lewis-Clark State College
Williams Conference Center
Selway River Room
9th Avenue and 4th Street

Missoula, Montana

June 2, 7-10 p.m.
Village Red Lion Inn
Canyon Room
100 Madison

Idaho Falls, Idaho

June 2, 7-10 p.m.
Littletree Inn
Teton Room
888 N. Holmes Avenue

Boise, Idaho

June 3, 3-5 p.m. and 7-10 p.m.
Red Lion Motor Inn Riverside
Liberty Room
9th and Chinden

Bend, Oregon

June 8, 7 p.m.
The Riverhouse
3075 N. Highway 97

Seattle, Washington

June 15, 3-5 p.m. and 7-9 p.m.
SeaTac Airport
Small Auditorium
Mezzanine Level

Spokane, Washington

June 16, 1 p.m.
Cavanaugh's River Inn
Shoreline B Room
N. 700 Division

Portland, Oregon

June 22, 7-10 p.m.
Portland Building
Hearing Room
1120 S.W. Fifth
June 23 - 9 a.m.-noon
Northwest Power Planning
Council
851 S.W. Sixth
Suite 1100

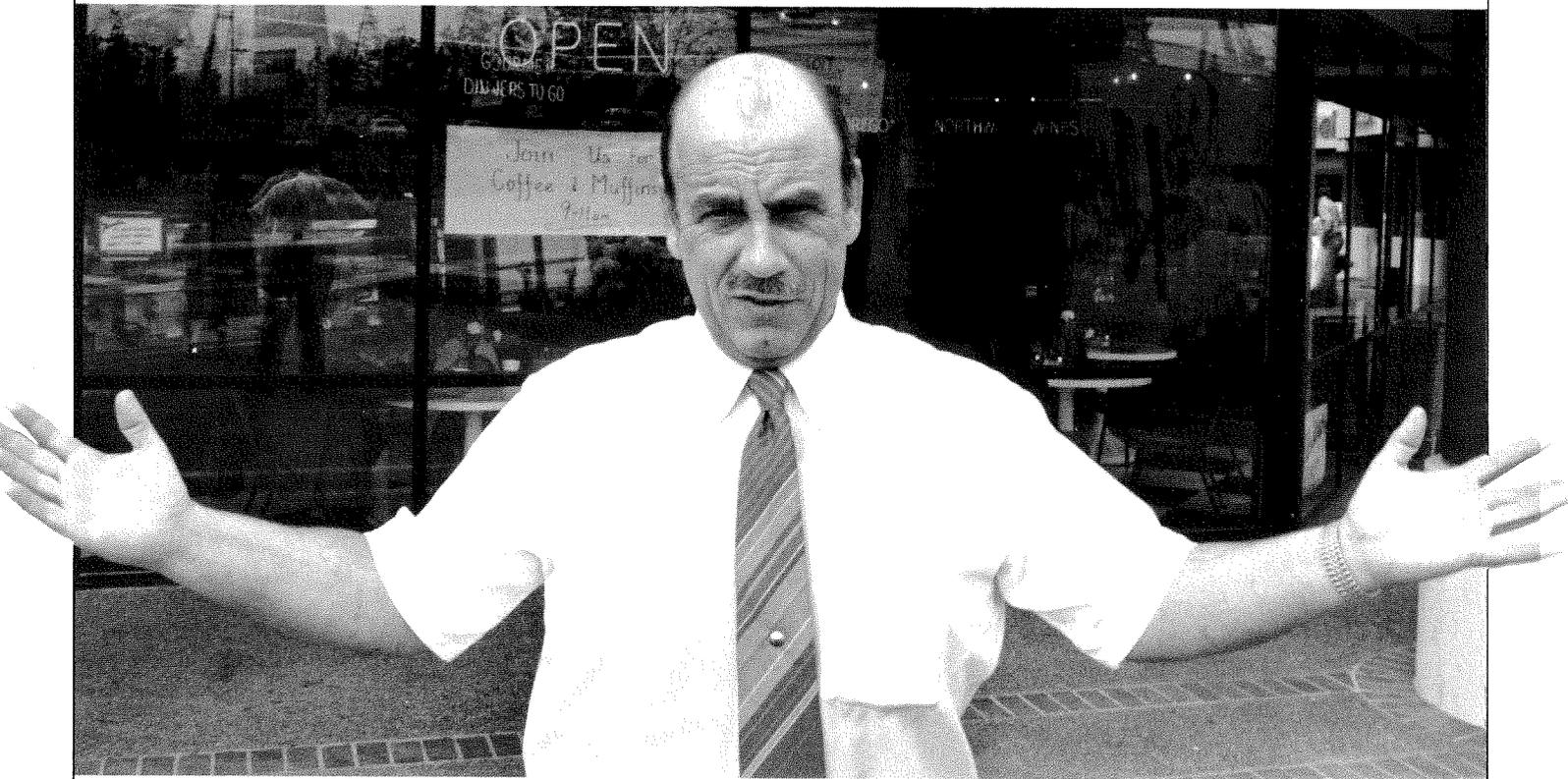
For questions regarding these hearings or the proposal in general, contact the public involvement division in the Council's central office. (Num-

bers are listed inside the back cover of this issue.)

To reserve a time to present oral comments at one of the public hearings, contact Ruth Curtis, information coordinator in the public involvement division, at

the same numbers. Requests to reserve a time period at a hearing should be received no later than two work days before the hearing.

HE'S HOWARD



OF HOWARD'S GROCERY

by Judy Branham
Portland Energy Conservation, Inc.

Howard Williams of Howard's Grocery has been known to greet his shoppers like a gracious host in a high-class cafe. The image is an appropriate one. The lights in Howard's are subdued; the produce is stacked like bright-colored sculptures; there is none of the glare and noise one generally equates with modern day supermarkets. And yet Howard's, in Beaverton, Oregon, is as modern as a market can get.

That's because the real news at Howard's Grocery is behind the scenes, where innovative conservation devices are projected to save about \$52,000 a year in energy costs. Williams' philosophy (about which he is effusive) is simple. "My granddaddy always said, 'If you want to make a dollar, save a dollar.

Then when you make that dollar, you've really made two dollars.'" That attitude led to Howard (everyone calls him Howard) fulfilling his dream of building a super-efficient supermarket and winning an "Energy Edge" award for surpassing the Northwest Power Planning Council's model conservation standards for commercial buildings.

"We knew we had a strong contender when Howard's came to us," said Energy Edge Manager Nancy Benner from Portland Energy Conservation, Inc. (PECI). "Howard had installed energy-efficient lamps in his last store seven years ago, before most people had heard of them. His philosophy fit well with the objectives of Energy Edge."

Applicant buildings for the Energy Edge award were

required to be at least 30 percent more energy-efficient than the Council's standards. Howard's Grocery was designed to be 39 percent more efficient and, since its opening in October 1987, the store is performing right on target.

Funded by the Bonneville Power Administration, Energy Edge is a Pacific Northwest competition to encourage developers and designers to incorporate highly energy-efficient features in new commercial buildings. It is a research effort in conservation capability building, to develop expertise for full-scale conservation when the region's current power surplus is used up. Through Energy Edge, Bonneville provides building winners with incentive payments for design and construction. Eligible buildings use electricity as the primary

source for heating and cooling.

Energy Edge winning buildings will be monitored for three years after they are up and operating. After the monitoring period, actual versus predicted energy savings will be compared, and the added costs of the energy-saving measures will be evaluated.

Four sponsors were chosen by Bonneville to implement the competition. PECO administers Energy Edge in the Portland metropolitan area and has managed the selection and implementation of Howard's Energy Edge design. PECO is a private, non-profit energy conservation firm. Other sponsors are the Oregon Department of Energy, Pacific Power and Light Company and the Washington State Energy Office.

Technical assistance began very early in the project. Staff from the Energy Edge program met with the entire design team for Howard's, including the building's owners at Columbia-Willamette Development Company, engineers, refrigeration experts, architects and electrical engineers. Together they analyzed the interactive nature of potential conservation strategies.

All the players brainstormed conservation measures to beat the model conservation standards. They used a computer model to analyze possible measures and predict costs for each one. Lighting and refrigeration were the two primary energy users in the building, so most of the energy savings come in those two areas.

Williams loves to show off the results of all this analysis — his new 42,500-square foot accomplishment and the energy-saving devices funded by Energy Edge. He mentions the energy-efficient light fixtures, lamps and ballasts. He points out the relaxed shopping atmosphere created by subdued lighting of less than 60 footcandles. "Most stores built now use around 115 footcandles," he notes. "The two

At Howard's Grocery, innovative conservation devices are projected to save about \$52,000 a year in energy costs.

most stressful conditions after a hard day at work are bright light and noise. Dark cocktail lounges relax people — not the martinis," he adds, delivering still more of his philosophy.

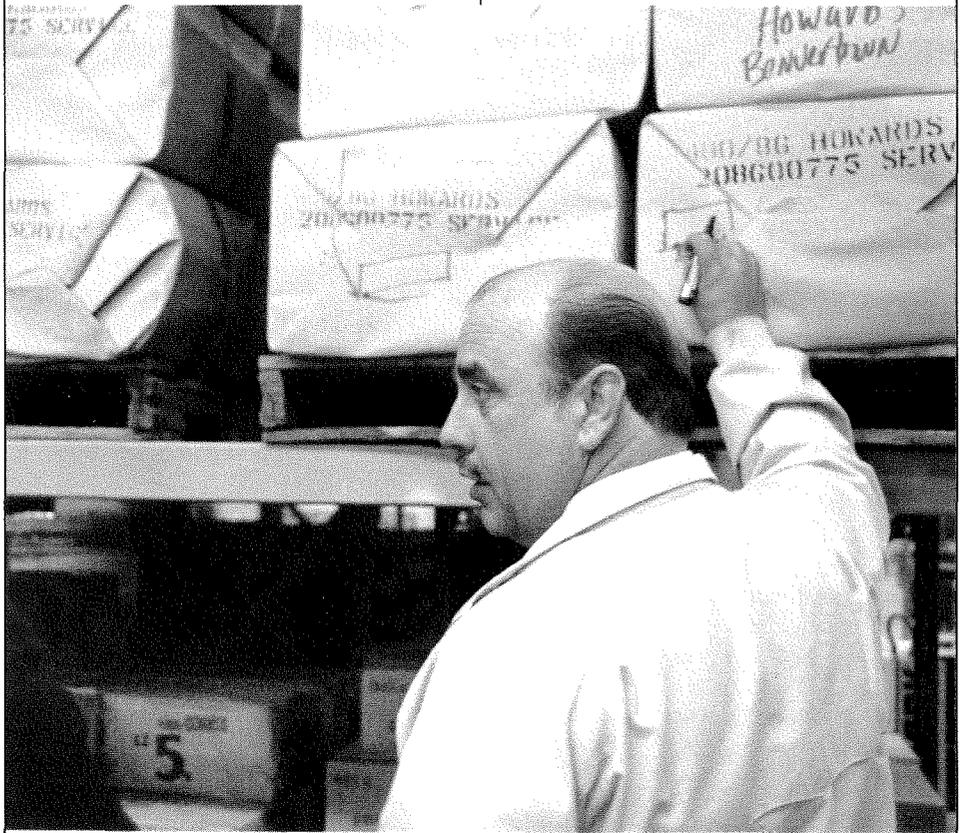
Williams particularly likes to create a special atmosphere. Reduced lighting overhead enhances the spotlighting of grocery displays, a technique Williams has long believed in. Nowhere is the effect more noticeable than in his produce department, where colorful fruits and vegetables are showcased more effectively in black produce cases. "The first time I ordered black cases several years ago, the manufacturer called me personally to make sure I really ordered black," reports Williams.

"I told them to mix their paint and when it was as black as it gets, to make it even blacker!"

Refrigeration at Howard's Grocery is also state-of-the-art. The system matches power consumption to the required refrigeration load, and a special pressure control allows compressors to operate more efficiently. "The refrigeration improvements alone may save me more than \$30,000 a year, because there's also less wear and tear on the equipment," says Williams.

Howard's also relies on reusing what would normally be considered waste heat. Hot gas discharged from refrigeration compressors is used to defrost freezer coils. And heat recovery from the compressors provides heat for the store, as well as for hot water in restrooms and in the meat preparation room.

Other measures funded by Energy Edge at Howard's include energy-efficient motors for evaporative fans and occupancy sensors for lights in offices and walk-in freezers. A central



humidistat controls the operation of refrigeration case anti-condensate heaters.

According to United Grocers' engineering department, total energy for a typical store of Howard's size built in the last five years costs about 25 cents a square foot per month. To date, Howard's is performing at 17 cents a square foot.

As can be imagined, Williams is enthusiastic about his energy savings. "In the future, energy will be one of the top two or three

cost items in running a business. We'll be able to pass along our savings to our customers with lower prices. That's exciting!"

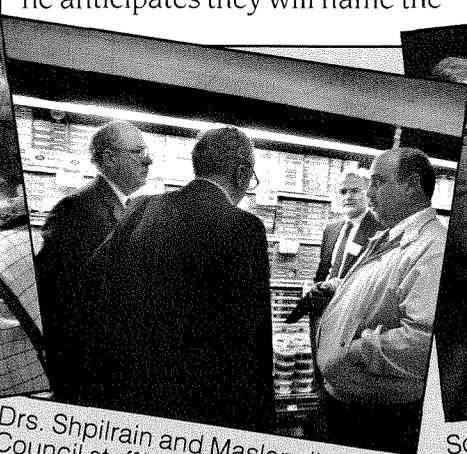
Besides becoming a kind of local hero in energy-conservation circles, Williams' efforts are being recognized around the world. In 1986, he was named one of the top 10 grocers in the United States. He was featured in a seven-page article in the January edition of *Progressive Grocer*, an international publication, and he anticipates they will name the

new Howard's Grocery "Store of the Year" for 1988. ICA, a chain of 3,500 grocery outlets in Sweden, has asked him to instruct their management on how to save energy and money by improving refrigeration.

It's a new dream for Williams, and he embraces it with all the ebullience he's known for. Howard the grocer is becoming a sort of ambassador at large for commercial conservation. Few things could please him more. ■



Williams greets Oregon Council Member Norma Paulus and Soviet scientists.



Drs. Shpilrain and Maslennikov and Council staff Tom Foley get a lesson in refrigeration from grocer Williams.



Soviets present Howard with a souvenir book about Russia.

Soviet Visitors See Conservation and Capitalism at Howard's Grocery

The fruits of energy conservation at Howard's Grocery in Beaverton, Oregon, were literally a feast for the eyes of three top-level Soviet energy officials touring some of the Northwest's most efficient businesses. The abundance of bright, fresh vegetables and fruits, cases full of choice meats, fish and poultry, a deli with heaping varieties of salads and hot foods, and a tank of live lobsters made an immediate impression at this Energy Edge award-winning store.

"In a country where refrigeration is scarce and people sometimes have to stand in line to buy cabbages, this store would be extraordinary," said Northwest Power Planning Council Member Norma Paulus, who accompanied the Soviets on their tour.

On their visit to conservation projects in the Portland/Vancouver area in March, the Soviets were guests of the Council. The tour is part of a cooperative conservation research effort between the United States and the U.S.S.R. The Soviets visited both residential and commercial buildings designed to meet the Council's model conservation standards for Northwest buildings.

"The Soviet scientists were very impressed with the store," according to Jim Litchfield, the Council's power planning director. "And they were struck by Howard's philosophy as a businessman. Conservation helps reduce his monthly costs and his savings are passed on to customers through lower prices. So he can pursue more profit through being more competitive in the marketplace."

They also found Howard to be a sincere and generous host. He gave them each a bag of groceries as they departed.

"We were very appreciative of the opportunity to see conservation happening," said Dr. E.E. Shpilrain, head of the energy department for the Institute for High Temperature Physics in the Soviet Union. "We were more impressed with what we saw than we thought we would be."

Litchfield explains that the Soviets' have studied and discussed energy efficiency in an effort to meet 30 percent of their future energy needs with conservation. But they still wondered if it was real. "It is real," he said. "In the Northwest, we're making it real by doing it."

—JB

MORRIS BRUSETT

*Morris Brusett just **seems** quiet.*

He hadn't been a former governor or legislator or Congressman like some other Northwest Power Planning Council members. He hadn't made waves in energy or fish and wildlife circles, nor had he published important papers. He was perhaps one of the few people in the region who didn't lay claim to having authored the Northwest Power Act. And he certainly wasn't flashy.

But ... in little over a year after his appointment, Brusett had become the Council's vice chairman and chairman of its power committee. The year after that, he was elected to be the Council's sixth chairman.

When Morris Brusett first arrived on the scene, he didn't appear to enjoy the picture he saw. Preliminary votes on some important issues threatened to fractionalize the Council, with an Idaho/Washington versus Montana/Oregon split. The staff, which had been forged under the charismatic leadership of Dan Evans, appeared aloof and not altogether welcoming to the newcomer.

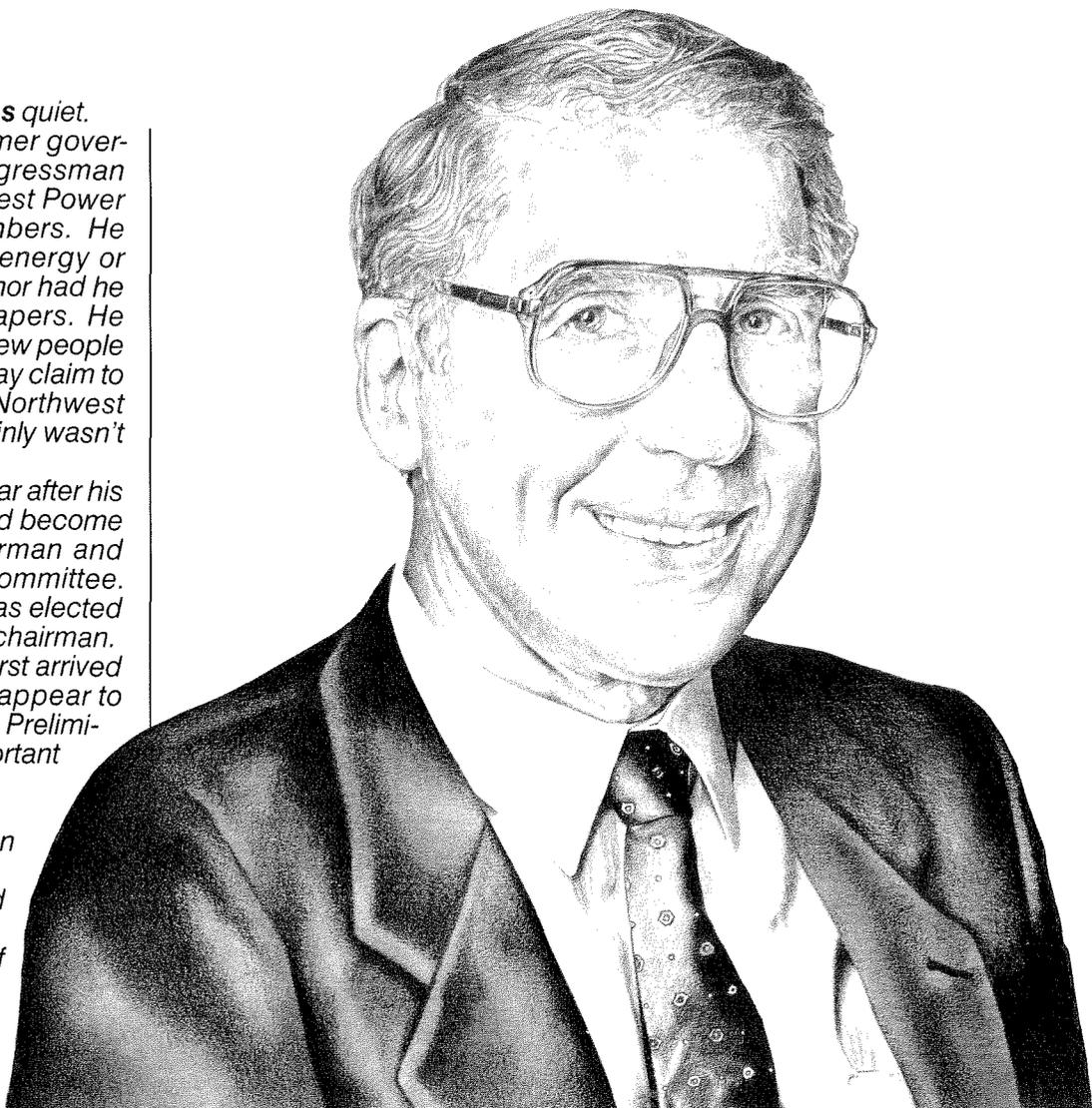


Illustration by Lynn Carson

Debate still reigned about the relevance and future of the Council as a lawsuit sought to render the Council either illegal or impotent. Relations between the Bonneville Power Administration and the Council sometimes were on the testy side.

Brusett was having none of that.

Without eloquent oratory, without prior technical expertise or political clout—in short, without seeming to—Brusett played a major role in changing how the Council works together and how it interacts with others. He has been a man who does things by the book. “If you’ve got a problem, let’s get together and talk it out,” is his philosophy. In short, he brought to the Council the one asset few other Council members had had—management experience.

Brusett came to the Council from a position as director of Montana’s Department of Administration, where he had supervised the operations of more than 550 employees. As department director, Brusett was also ex officio state treasurer and controller, responsible for Montana’s cash management and accounting systems.

A certified public accountant by vocation, Brusett had served 14 years as Montana’s first legislative auditor, responsible for conducting financial and program audits for all state agencies. That job was a homecoming for Brusett (his home town of Brusett, Montana bears his family’s name) from a position as an auditor for the state of California.

Brusett has a degree in business administration from Walla Walla College and did post-graduate studies at the University of Washington and Loma Linda University. He lives in Helena with his wife Geri.

Q. What changes have you seen in the Council since you’ve been a member? Obviously, there have been major changes in membership. How has this affected the mix of the Council or the direction? Has the personality or the focus of the Council changed as a result of the turnover?

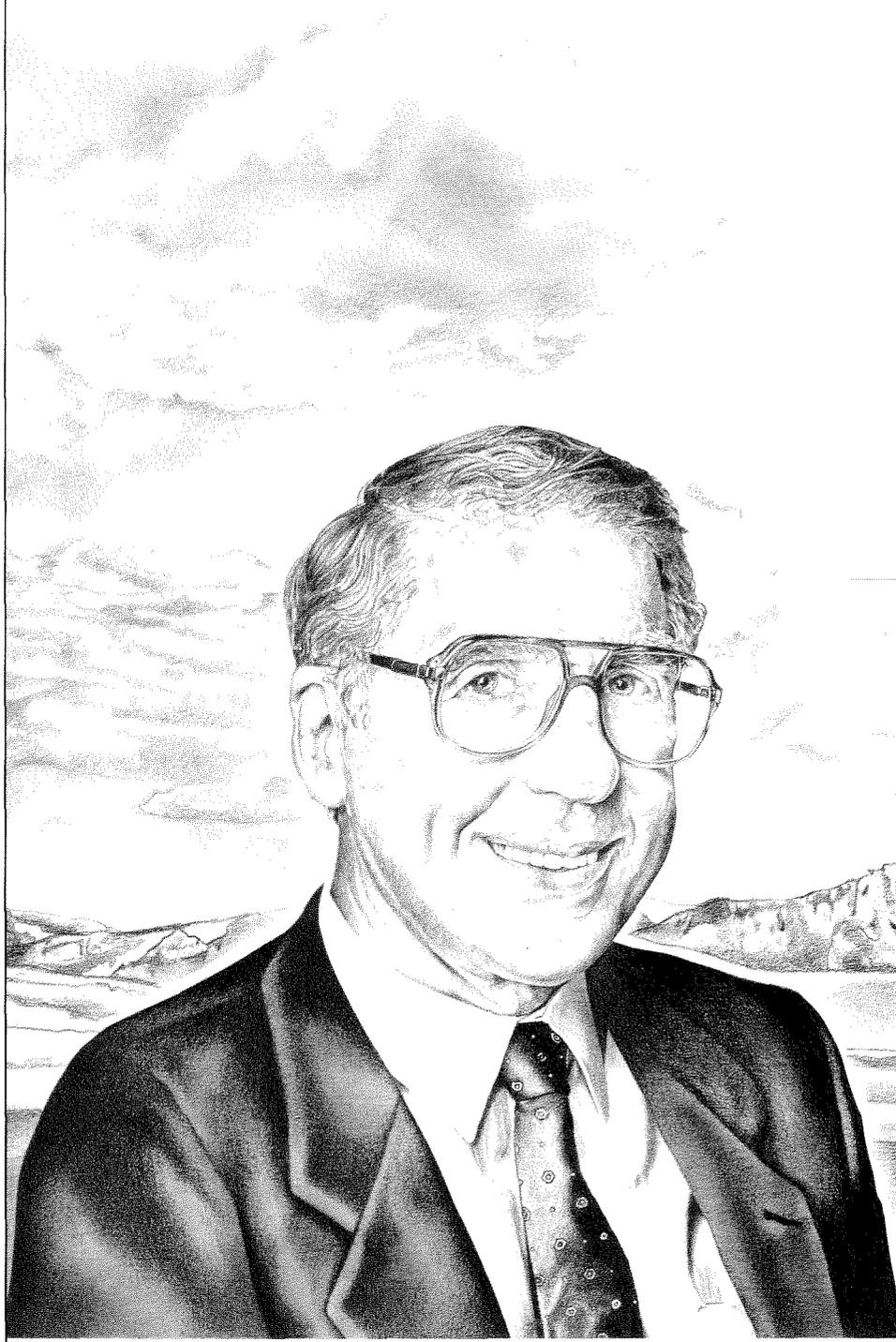
When I first started with the Council, it seemed as if there was more contention and a confronta-

When Morris Brusett first arrived on the scene, he didn’t appear to enjoy the picture he saw.

tional style. Our current Council members work in a more harmonious fashion. It doesn’t mean that they’re not independent or have

strong feelings about particular issues. But, because of their backgrounds, serving in legislatures and in Congress and in other policy-making roles, they do very well in interaction. And so we reach even difficult decisions in a lot more harmonious fashion.

We have some extremely strong Council members. I think that this Council is as strong as any Council, including the era of Dan Evans, because we have had people like



Bob Duncan and Norma Paulus from Oregon. In Washington, with [Ted] Bottiger and [Tom] Trulove, I don't think you could find stronger members than they are. And you can look at Idaho [Bob Saxvik and Jim Goller] too, and say the same. George Turman, Montana's newest Council member, is also highly qualified. He's going to make an outstanding contribution. So I believe we have a really good Council, even though the membership has changed.

Q. How has the Council's relationship with the Bonneville Power Administration changed, or has it changed?

It has changed significantly since I started. Part of that came through the 6(c) process.¹ I think that process — where we sat down with Jim Jura personally and his key staff and worked through things — was the underpinning of a whole new relationship with Bonneville. We have to commend Jura

for a lot of that, because he recognizes the role of the Council and the importance of the Council to the region. He recognizes that even though Bonneville and the Council are independent, we both have specific roles, and to be successful we have to work together. So, his attitude played a large part in working out a better relationship.

Also, I believe my predecessors as chairmen played a role in the change in the way that the Council works with Bonneville. Both Bob Saxvik and Bob Duncan were consensus builders and wanted to work with people. That's my style too, to be cooperative and to work out solutions. I think we have a very good relationship, although we still maintain our independence. I think we're going to be a lot more successful, and the region will benefit because of it.

Q. You mentioned the style of Bob Saxvik and Bob Duncan and their ability to forge consensus. You're really the only Council member with management background. How would you describe your style?

The Council is a collegial group whose eight members basically share the authority. Although my background is perhaps different from some of the other members, we all recognize that you have to build a consensus. Being chairman of the Council is not like being a director of a department, where you can say, "This is the way it is." Even that doesn't work anymore in government or business. As a director or a lead person, you have to work with the staff and develop a partnership/ownership, or else you really aren't successful. The old dictatorial style is gone, even in most line agencies.

We all learned a lesson with the early MCS [model conservation standards], when we went out

1. Section 6(c) of the Northwest Power Act calls for the Bonneville Power Administration to submit major resource acquisitions to public and Council review in order to guarantee they are consistent with the Council's power plan. The period referred to was the first major acquisition of a resource (Bonneville's Conservation Modernization Program for the aluminum industry) and first test of the Council's review authority with Bonneville.



CARSON EB

and said, "This is the way it should be," without getting the region to sign up for it. It just didn't work. So we had to go back and rethink the situation and get the region to be a partner with us in developing the MCS. Others had to have ownership in it before they were willing to get behind the standards and get the job done.

Regional cooperation is still an elusive target.

Q. What do you see as the biggest issues ahead for the Council? Let's deal with fish issues first.

In fish and wildlife, we have a new program, a revised program. Now we have to build on that, and I believe it really is a blueprint for the future. One issue facing us this year is subbasin planning. We have to monitor this effort and make sure the results help us determine how we're going to double the fish runs, and how we're going to have integrated planning throughout the basin.

In addition, we're embarking on wildlife mitigation. We've had a number of presentations on mitigation proposals including those for Grand Coulee Dam in Washington, the Willamette plan in Oregon, and plans for several Idaho projects. We're in the process of developing an overall wildlife mitigation plan for the region. We did complete one for Hungry Horse and Libby dams in Montana.

I believe completing the bypass systems of the mainstem Columbia River dams is also critically important. Bob Duncan did a yeoman's job taking the lead in this area and working with Congress to secure funds. The region has agreed that we need to get these bypass facilities in place. Now we need to make sure the [U.S. Army] Corps of Engineers funds these projects through to their completion. We're continuing to work with Congress to see this

happens. We need to do it, because it doesn't make sense to continue to spill water. It's too costly to the region.

Of course, another key issue is protected areas. We had a staff proposal out on the street for several months, and we heard a great deal of public comment. We're now in the phase of seeking comment on a proposed amendment to our fish and wildlife program. I would expect that, whatever the final decision is, we're still going to make sure we achieve our overall goals of protecting the ratepayers' investment in our fish and wildlife, and at the same time send signals to both potential developers and FERC [Federal Energy Regulatory Commission] that we intend to protect the resource.

Q. What about the major power issues ahead?

Our major work in power now is the power plan update. It is our top priority. Even though we have a 20-year plan, and we have our so-called "jaws forecast" — the range that provides for high or low growth, unless our plan is timely, it won't be credible. We can't have a perception that the plan is not current. By having updates, it sends a signal that the plan is timely, that we've responded to a changing environment, and that it's still relevant for the future.

Staying current is important because we're the premier planners for the region. We're independent; we represent our individual state governments; and we have a vehicle for building regional consensus. The region is looking to us for leadership in this area.

The power plan update is also important from the standpoint of the diminishing surplus. People wonder how that's going to affect the region. We've basically completed our Western Electricity Study, so we'll be able to integrate the results of that study into the plan. It will also be our first opportunity to tie in our planning to Bonneville's resource program. We've been working this year to interface our plan and Bonneville's resource strategy to avoid all the confusion, duplication and all the extra work that was involved in

participating in two processes.

Another priority will be the model conservation standards. It seems as if we're always involved with the standards. When I started with the Council, that was the first order of business, and we're still right in the middle of it.

It's important that we set the stage for the future. Right now we have in place what's going to happen up to the end of 1988. But what's the long-term plan for MCS? How's it going to work? What's everybody's role? We have to make those decisions now so that we don't have any uncertainty.

Finally, I think a continuing issue will be regional cooperation. To be honest, this is still an elusive target. The Council's going to have to be more creative and pay greater attention to it. There are tremendous benefits from cooperation, and somehow we have to try to capture those benefits. I believe the Council is a unique agency and one that can provide the leadership to bring about regional cooperation. We just haven't done it yet. We need to do a lot more in that area, and that's something we have to look seriously at again this year.

Q. What has been your biggest disappointment in the Council, if any?

I don't think there's really been any big disappointment. It's more of a learning process for me and a recognition that consensus building and progress takes time.

I suppose that when I first started, I was a little impatient about getting results, particularly in the area of MCS and some of the other issues that we had reviewed and talked about for a long time. As a director of a department in Governor [Ted] Schwinden's administration, I could bring about results a little faster than you can with a region. With four states, we have a lot of different people and a lot of different interests. We have east/west, urban/rural, public/private — all these considerations. It's not a disappointment to work this way, but it's a realization on my part that it takes time, and you have to spend a lot of time getting everybody involved. So, it's a little

slower process, perhaps, than I was used to, but I'm comfortable with that now.

Q. What part of the Council's work do you enjoy the most?

When I first started, I concentrated on power issues. I'm still on the power committee, but over the last year or two, I've spent a lot of time with the fish committee. Actually, I find both fish and power issues exciting. The more I get into the issues, the more challenging I find them. I'm also starting to see some results, long-term results.

Being part of a process with such huge ramifications is a tremendous challenge, which makes it exciting. I really like the overall job now more than ever in the past three years.

Being chairman has been a tremendous challenge, too. I've been in a leadership role for a long time in my life, and I like that role. I feel like I can play a major part in getting things done, and I'm frustrated when things don't get done. I'm results-oriented when it comes to issues. The chairmanship has given me more of an opportunity to focus the Council and concentrate on specific areas.

Q. You've said this might be your last year because of the change in governors. Do you anticipate there's any possibility you'll stay on?

Well, in Montana as in the other states, these positions, of course, are gubernatorial appointments. The history has been that a new governor would appoint somebody who's close to him and had worked with him. Since Governor Schwinden is leaving, I don't have that relationship with any of the candidates at this point. So I expect that I'll be leaving. I have to admit that at one time, I didn't think that would be so bad because of the tremendous time commitment required to be an effective Council member.

I think this is the toughest job I've ever had in terms of what I have had to learn, in terms of the multitude of issues and the magnitude of goals and all the elements that go behind each of the

Being part of a process with such huge ramifications is a tremendous challenge.

issues. It's challenging now, but at first it felt real frustrating because I wondered if I'd ever capture all the relevant data and get up to speed on the issues. In addition, there's the travel time. It takes a tremendous amount of travel time coming from Montana. I would say, about two-thirds of my time is spent away from the Montana office. I'm always on the road or in the air to Portland or Seattle or Boise or somewhere else.

But even though there are the downsides, the upside is that I'm enjoying my job now more than ever. I'm comfortable with the issues. I think I understand them. I'm seeing progress. And we have such a good group to work with. In case you don't ask the question,

I want to add that we have the most outstanding staff that I've ever been connected with. At first I wasn't so sure, to be honest with you, because of some of the frustrations of the model conservation standards and some of the interactions that went on between staff and Council. But now I'm very comfortable with our staff, and I just think our people are outstanding.

I know I will miss the friendships and closeness that have developed among the Council. You can't go through difficult problems like we have and work your way through them without building a certain comradery. When you leave something like that, it's something you're going to miss.

Q. What's prevented that classic east/west split that seems to affect all other political bodies in this region?

Well, I'm not sure what happened before my time, but I think what you say is correct. We have not had an east/west split. In fact,



we've had more of an Oregon/Montana coalition and an Idaho/Washington coalition. But I think that's basically a result of personalities, and that's pretty much behind us now. The Council members recognize the regionality of our organization. Individual members have definite views, but they also recognize that we're a region and, for the most part, will try to end up with a product that recognizes state differences, but that's still good for the region as a whole.

Q. Over the years, there's been debate in the region about whether the Council is a regulatory agency, at one extreme, or if we're simply advisory, at the other extreme. What do you see as the classic role of the Council?

Of course our major and most obvious role is that of a premier planner. We are independent, and I think that we now have the recognition in the region that our planning capabilities, our fish and wildlife program and our power plan, are all top quality products.

You could characterize our role as that of a crucible for new ideas.

It's important that we continue to focus on our role as planner. I think that we should be *the* planner. That's why I've strongly supported efforts to work with Bonneville to avoid duplication, so it's clear that we're the planner and they are the program implementor.

Planning, no matter how good, is not enough. You also have to see results in terms of implementation. It doesn't do you a lot of good to plan if nothing is ever accomplished. The Council has a role in monitoring and oversight of implementation. But, we're not a regulator—that's not our role.

It seems to me that we also bring to the region another less obvious role. I guess you could characterize it as a crucible for new ideas, a medium for interaction in the region, and then finally,

a forum for consensus building. You can have the best plan, but unless you can bring the region with you, and the regional parties believe what we're doing makes sense, it's not going to be implemented.

I also see us playing a role in ensuring stability in the region. Right now, you have Bonneville concerned about revenues, and the investor-owned and public utilities are also concerned about revenues. There's a tendency to let the big picture drift because of short-term needs. And they are real needs too. I think we're kind of the rudder that says, "Wait a minute, let's not forget what's best for the region in the long term. Let's protect the regional interest and make sure we have the least-cost resources for the future." The Council has to serve as kind of the stabilizing factor so that we don't deviate too far from our long-term regional plan because of short-term situations.

I believe the Council is now firmly entrenched as an institution in this region. At one time there was a lot of discussion and supposed turf fighting between us and Bonneville. But that's behind us and we're established as a planning body. We're also established as the institution that's going to get the corrections made for past wrongs to fish and wildlife because our program is the region's program to get the job done. We're going to reinforce that our power plan is the regional plan now, as we finish our update and ensure that it is timely and relevant.

It was interesting to me to hear recently that New England and other parts of the country are looking at a similar institution or even considering contracting with us to do their planning. It does say something about the recognition and significance of a regional body like ours. I think that means we've been successful. ■



It's an easy shift of numbers on a page to move the cost of lighting, heating and cooling commercial enterprises from the expenses column to the earnings column. It stands to reason that money saved from the cost of running a business generally makes its way down to the bottom line.

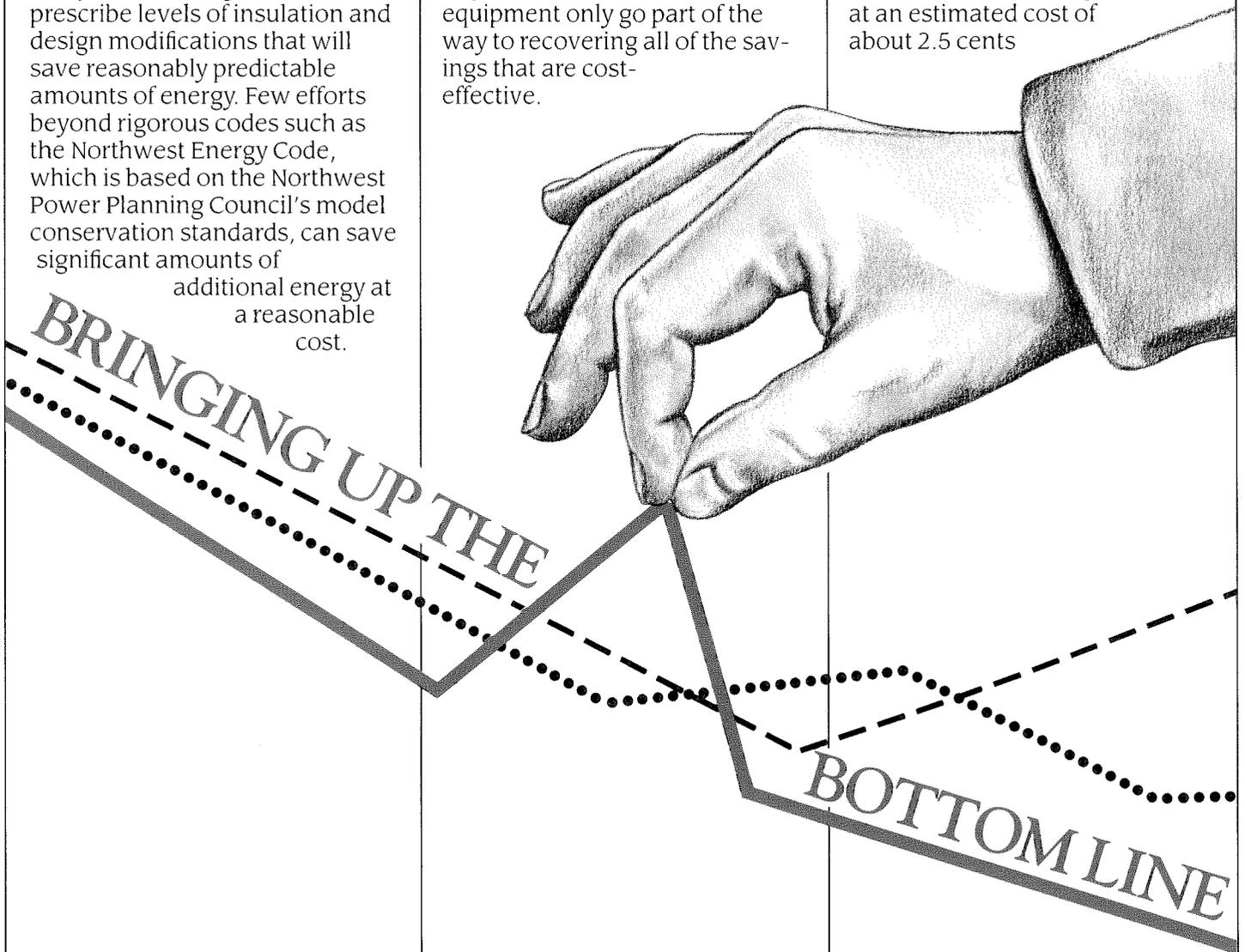
But cutting operating costs in the commercial sector is a far more complex process than, say, saving energy in houses. In the residential sector, the range of building shapes and sizes, uses and characteristics, and the influence of climate can be easily analyzed. Building codes can prescribe levels of insulation and design modifications that will save reasonably predictable amounts of energy. Few efforts beyond rigorous codes such as the Northwest Energy Code, which is based on the Northwest Power Planning Council's model conservation standards, can save significant amounts of

additional energy at a reasonable cost.

In the commercial sector, however, the calculations become more intricate. The amount of energy used by any given enterprise is as likely to be influenced by the nature of the business as by the structure that houses it. Office complexes with banks of computers, for example, will have different requirements for energy than will restaurants or department stores. Consequently, determining the most efficient ways to run very different sorts of companies calls for more tailoring of conservation efforts than does residential conservation. Building codes that require efficient structures and equipment only go part of the way to recovering all of the savings that are cost-effective.

So the Council, in developing its model conservation standards for commercial buildings, looked at both building codes to establish a base level of conservation, and programs that encourage more inventive approaches to saving energy beyond the code-imposed level.

In its 1986 Northwest Power Plan, the Council estimated that the region could save more than 500 average megawatts over the next 20 years by gaining region-wide acceptance of the model conservation standards in the commercial sector. This is equivalent to the energy produced by a medium-sized coal plant at an estimated cost of about 2.5 cents



per kilowatt-hour or half the cost of the coal plant.

The plan treated the additional energy savings that could be secured by going beyond the standards as a "promising resource," and it encouraged the Bonneville Power Administration to support programs promoting new commercial construction that betters the codes by as much as 30 percent. Bonneville's "Energy Edge," described elsewhere in this issue, is one such program.

Finding a Better Building Code

The 1986 Power Plan also called for a review of the standards to determine whether they still capture all the savings that are cost-effective. When the standards were first developed in 1983, they reflected a near consensus among members of the engineering and building com-

Building codes that require efficient structures and equipment only go part of the way to recovering all of the savings that are cost-effective.

munity. These standards were based on Standard 90A-1980 of the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE), a standard that served as the model for most states' (including the four Northwest states) commercial building efficiency codes.

In the years since 1983, there have been tremendous advances in lighting efficiency and in energy management systems for operating many different sorts of

businesses. Both Oregon and Washington have adopted new commercial building codes with more stringent guidelines to reflect the changing technology. In addition, the U.S. Department of Energy and ASHRAE are both developing new, more stringent nationwide standards which will, when adopted, surpass the energy savings of the Council's standards.

These activities indicate that there are cost-effective energy savings in the commercial sector not included in the Council's standards. Since the Council is required by the Northwest Power Act to garner all power savings that are cost-effective to the region and economically feasible to consumers, a review and probable revision of the commercial standards is in order.

This review began in 1987. Council staff compared the existing model conservation standards for commercial buildings with the new Oregon and Washington state codes, and the proposed Department of Energy and ASHRAE codes. Such a comparison has not been easy, because no single set of codes consistently surpasses existing codes.

For example, the proposed Department of Energy and ASHRAE standards offer builders and local communities more flexibility with more alternatives to select from in meeting the codes. For certain building types, they offer more efficiency with negligible price impacts over either the existing Council standards or the Oregon and Washington codes. But the Council's existing standards and the Oregon and Washington codes require more efficient lighting than the proposed ASHRAE code, while the Department of Energy's proposed code for lighting is roughly equivalent to the tougher standards.



In addition, the two proposed standards cover some energy-related features and equipment not addressed in any existing Northwest codes. They have generally more stringent requirements for making the shells of structures (called the "envelope") more conserving, using more efficient equipment, and incorporating energy-use monitoring and management systems in new commercial buildings. However, neither proposed code is expected to be adopted until this fall.

Pending their adoption, the Council is interested in public comment on which of the code options or which combination of measures should be integrated into the model conservation standards. An option being considered by the Council would be to adopt the new ASHRAE standard when it is finally approved, but modified with the more efficient lighting standard already in place in the Northwest. Since existing ASHRAE standards are the basis for most state and local building codes in the region, building code officials would have few problems adapting to the updated version. This is not the case with the Department of Energy standard.

An issue paper covering the Council staff technical and economic comparisons of the codes is available from the Council's central office. (See order form on back cover.)

Beyond the Codes: Still More Savings

In studying building codes for commercial construction, Council staff found that even where efficiency codes have been adopted projected energy savings levels are not being met. This is largely due to institutional problems and financial constraints. Inadequate training for code officials, designers, builders

and program administrators has limited their ability to enforce existing codes, let alone go beyond the codes to other equally cost-effective improvements.

Most of the regional impetus has been in support of residential conservation programs. While some utilities have offered assistance to builders of new commercial structures, no regionwide program exists to acquire all regionally cost-effective conservation savings in the commercial sector.

Designers and others in the construction industry also have difficulty keeping up with changing technology. In Oregon, the Portland General Electric Company operates its Energy Resource Center to help designers and engineers track technical advances. And in Seattle, a commercial lighting laboratory, sponsored by the Bonneville Power Administration in cooperation with Seattle City Light and the Natural Resources Defense Council, will provide opportunities to test various lighting alternatives to serve specific tasks and facilities. But neither of these will serve the regional clearinghouse role needed to provide special training, maintain a library of design and product information, and assist designers and engineers with computer models and other design aids.

Furthermore, the only research program demonstrating advanced energy-efficient design and construction techniques for new and remodeled commercial buildings, Bonneville's Energy Edge program, is scheduled to end after 29 buildings are built and monitored.

The Council is considering entering rulemaking procedures to amend its power plan to incorporate programs that can support both the regionwide adoption of energy conserving codes for commercial buildings and technical and financial assis-

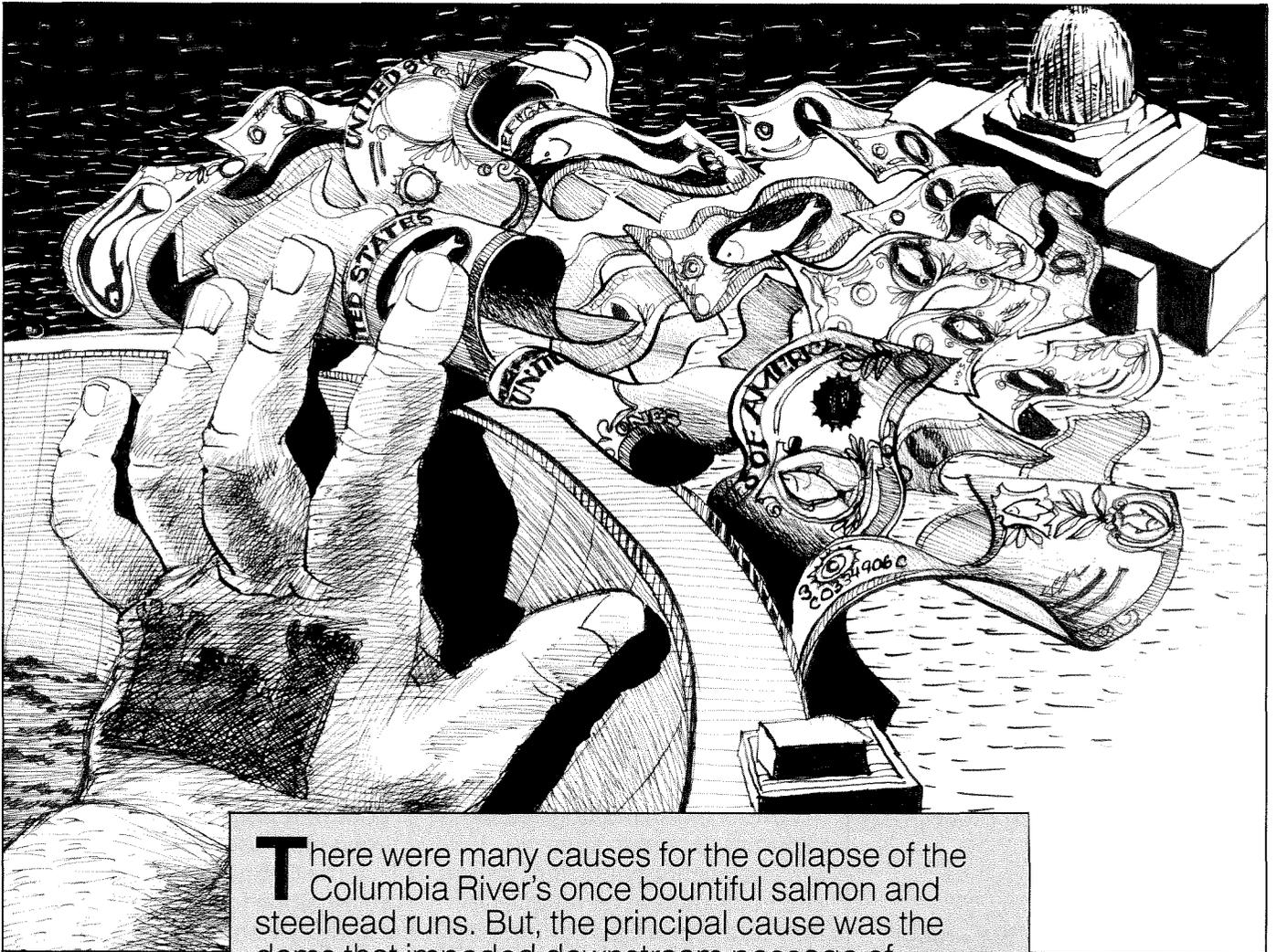
tance to help designers and engineers go beyond the codes to build even more efficient businesses. Among the programs being considered are the following:

- Energy code adoption and enforcement support (both technical and financial) for local governments and utilities to encourage the adoption and implementation of more efficient building codes for new commercial construction;
- Energy code training to familiarize architects, engineers, designers, builders, code enforcement officials and other developers of new commercial buildings with alternative ways to comply with the codes;
- Similar assistance to enable local governments and utilities to pass even more efficient building codes than those that meet the regional standard;
- Design assistance and awards to encourage new commercial construction that captures all regionally cost-effective conservation savings;
- A regional clearinghouse to publicize new technologies and distribute the findings of research and demonstration programs, as well as coordinate educational opportunities; and
- An ongoing research program to demonstrate, evaluate and encourage application of energy-efficient technologies that are commercially available but not yet widely used.

If the Council does enter rulemaking to incorporate changes in the commercial standards into the Northwest Power Plan, hearings will be held in each Northwest state to take public comment and refine the standards and proposed programs. ■

CORPS DAMS FLOW OF FISH FUNDS

by Steve Crow



There were many causes for the collapse of the Columbia River's once bountiful salmon and steelhead runs. But, the principal cause was the dams that impeded downstream passage of juveniles (called "smolts") trying to reach the sea, as well as adults fighting their way upstream to spawn. By the late 1950s, the Columbia River was on its way to becoming the most heavily developed waterway in America.

In 1959, the impact of development on the fish runs led Oregon Senator Richard Neuberger to remark that "... these magnificent hordes [are] thinned to a few stragglers." By 1973, when the last federal dam was built, the salmon catch was down

nearly 80 percent from harvests prior to the completion of Bonneville Dam. By 1980, the Pacific Northwest was perilously close to losing the Columbia River salmon. Some runs had been considered for classification as endangered species.

Development of the dams and hydroelectric projects created impediments to passage of fish and also greatly altered natural flows in the Columbia River Basin. The spring runoff is stored in reservoirs and used later in the year to produce electricity. This reduces and slows natural river flows at a time when juvenile salmon and steelhead are migrating downstream to the ocean. Slower travel time to the sea increases the risks for these young fish.

In the past, efforts to protect and rebuild the fish runs were always marked by controversy. In recent years, shrill and unproductive conflict has been replaced in part by compromise and conciliation.

Moreover, research shows that many juvenile salmon and steelhead are killed or seriously injured when they are drawn through the dams' power turbines. Fisheries authorities estimate that, on average, 15 percent of all fish passing through the turbines are killed. Because fish go through a number of dams, there is a significant cumulative loss. On the mainstem of the Columbia River, of 100 fish passing the nine dams along the migration route, at least 50 will be killed at the dams.

In the past, efforts to protect and rebuild some of the fish runs on the Columbia were only marginally successful and always marked by controversy. Deep-seated animosities persisted among conflicting interests: fisheries agencies, Indian tribes, commercial fishermen, and the operators of

the dams that have so changed the fish's traditional home.

In recent years, however, shrill and unproductive conflict has been replaced in part by compromise and conciliation. The divergent interests are actually working together to save the fisheries resource. The beneficiaries of this new cooperation are the Northwest's prized salmon and steelhead.

Over the last five years, the Pacific Northwest has taken major steps toward addressing the particular problem of downstream passage of juvenile fish. The Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program emphasizes a four-part strategy for improving the survival of young fish attempting to migrate past dams on the Columbia and Snake rivers. First, to speed the young fish through the system of reservoirs, a block of water is released in the spring when the dams would normally store the water to generate electricity later in the year. This "water budget" creates an artificial freshet to imitate the one young fish used to ride before the dams were built.

The more difficult challenge is to move the fish through or around the dam structure itself. To accomplish this task, permanent bypass systems need to be installed at the dams to divert young fish from the turbines. Until these bypass systems are installed and successfully operated, spills of water over the dams rather than through the turbines must be used to flush smolts through the system. The interim spill solution, however, can be quite expensive to the region because of the foregone hydroelectric generation and its associated loss of power revenues. Finally, the other method for downstream passage, which works for certain stocks of fish, uses facilities to collect and transport the fish around the dams in barges and trucks.

While all of these techniques are useful in certain situations, the only permanent, long-term solution for downstream passage is to plan, design and install bypass systems at all the mainstem dams

as soon as possible. These bypass systems use submersible screens that deflect the fish from the turbines and into a bypass channel that deposits them below the dam. The Council estimates that these bypass systems will cut turbine mortality in half, thus increasing the survival rate of young migrating salmon and steelhead. Right now, the bypass facilities vary from dam to dam. Some are considered state-of-the-art. Others are obsolete. Still other dams have no bypass facilities at all.

The overall strategy for improving mainstem dam passage is supported strongly in the region. A broad basinwide consensus has developed among the Council, state fish and wildlife agencies, Indian tribes, the Bonneville Power Administration, and private and public utilities in the region. Everyone agrees to support the installation of new or improved screens and bypass facilities at all mainstem federal dams as soon as possible.

In early 1987, this regional coalition agreed to an accelerated bypass development and installation schedule at the mainstem dams. The schedule called for completion of all bypass facilities by 1994. Meeting this expedited schedule, however, depended upon increases in federal appropriated funds directed to the U.S. Army Corps of Engineers. These appropriations will be repaid by the region's ratepayers as a part of the hydropower projects.

The only permanent solution for downstream passage of salmon is to plan, design and install bypass systems at all the mainstem dams.

The U.S. Congress, in both 1987 and 1988, added the necessary funds for these fish bypass projects to the federal budget. In fiscal year 1988, Congress added \$8.7 million for fish passage activities at five dams: Little Goose, Lower Granite, Lower Monumental, Ice Harbor and The Dalles. Legislative report language explained in detail how Congress wanted the funds to be spent. In addition, Congress expressed its support for the fish bypass program and instructed the Corps of Engineers to place a higher priority in their own budget process on these important activities.

The Corps has responded to the region's support and this clear congressional intent by withholding current year funds for bypass and by not requesting any follow-up funding for these programs in fiscal year 1989. As a consequence, the accelerated schedule for bypass improvements cannot be met. The schedule has slipped by about three years. "This delay will result in more damage to fish, increased construction expenses, and a more costly spill program

for the region," says Ed Sheets, the Council's executive director.

Even more disappointing, according to Sheets, is the fact that the funds are being withheld pending a million dollar study on whether bypass should be funded. "I'm particularly upset that the Corps would waste a million dollars and a lot of time on issues that have already been decided," said Bob Saxvik, chairman of the Council's fish and wildlife committee.

The Corps has dammed up the flow of fiscal 1988 appropriations apparently in order to conduct a further policy review at its headquarters in Washington, D.C. The report, which is now under review in Washington, was originally submitted to headquarters from the Corps' North Pacific Division a year ago. It has been under review since then, but has not been available for comment or analysis by those in the region who developed the fish bypass program.

The Corps' refusal to spend fish bypass funds has drawn some rather strong reactions from those familiar with the fish wars of the past. Many of those in the region who have been strong allies of the Corps are dismayed by its recent

actions. Idaho Senator James McClure reportedly told Corps officials that "... it gets disturbing when Congress takes action on something like this and you say you're not going to honor it, ... you're going to get into a war that neither one of us wants to get into."

Sheets adds, "During a period of cooperation in the region, it is unfortunate that a federal agency has cornered its friends into speaking in terms of war again. The region needs cooperation. Burdening the constructive efforts of the fish and wildlife program with the baggage of procedural delays is inexcusable."

As Oregon Senator Mark Hatfield observed last summer at the Bonneville Power Administration's 50-year anniversary, "[let this region] be a ladder to the spawning ground of a national commitment to protect and enhance fisheries ... the investments in the Columbia River's fisheries are beginning to pay a handsome dividend that promises only greater growth in the future, if we keep our commitments." ■





THE AFFORDABLE HOME

by Danny Parker
Montana Office,
Northwest Power
Planning Council

As almost anyone who has tried to finance a new home knows, when you apply for a loan the two most important factors are the price of the house and your personal income. A lending officer will consider what fraction of your monthly income is available to be spent on the mortgage. Usually this "debt-to-income ratio" is about 30 percent, meaning you may spend up to a third of your monthly gross income on the loan. In the simplest terms, this sets the ceiling on the maximum cost of the house that you may qualify for at a given income level and financing rate.

What most people don't know is that most lending officers also consider a number of other expenses that might affect a homeowner's ability to repay the loan. One of these is the monthly utility bill. Money being spent on space heat, hot water and appliance electricity is money not available to spend on the mortgage.

Until recently, most lenders estimated this expense by taking a survey of typical bills from local utilities and making up an expected cost schedule, keyed against the square-

footage of the house. These schedules have typically been developed by local offices of the U.S. Department of Housing and Urban Development (HUD). At best, the current method does a crude job of estimating utility expenses. Widely varying utility rates, the costs for different fuels and the level of energy efficiency of the houses have not been accounted for in the HUD process.

For example, when the Northwest Power Planning Council developed model conservation standards for new electrically heated buildings, construction practices in the Northwest began to change. New homes built to the Council's standards require less than half the electricity for space heat than conventional electrically heated homes. Electric heat can be a sizable portion of any household's monthly expenses, but the HUD process did not account for these savings.

The problem has been convincing lenders that the predicted energy savings would actually appear in the form of lower electrical bills. Lenders needed some form of tangible evidence and a simple process, comparable to the one they are used to, before they would change their lending practices.

Well, change is taking place. There are enough results in now from monitored homes built to the model conservation standards that savings from these homes can be estimated with a high degree of confidence. Moreover, the monitoring has shown just how much more affordable these very energy-efficient houses are, when compared to homes built to current practice.

These monitored results show significant differences in the average monthly utility bills for three different house types. Figure 1 shows these differences in average annual space heating. The model standards house

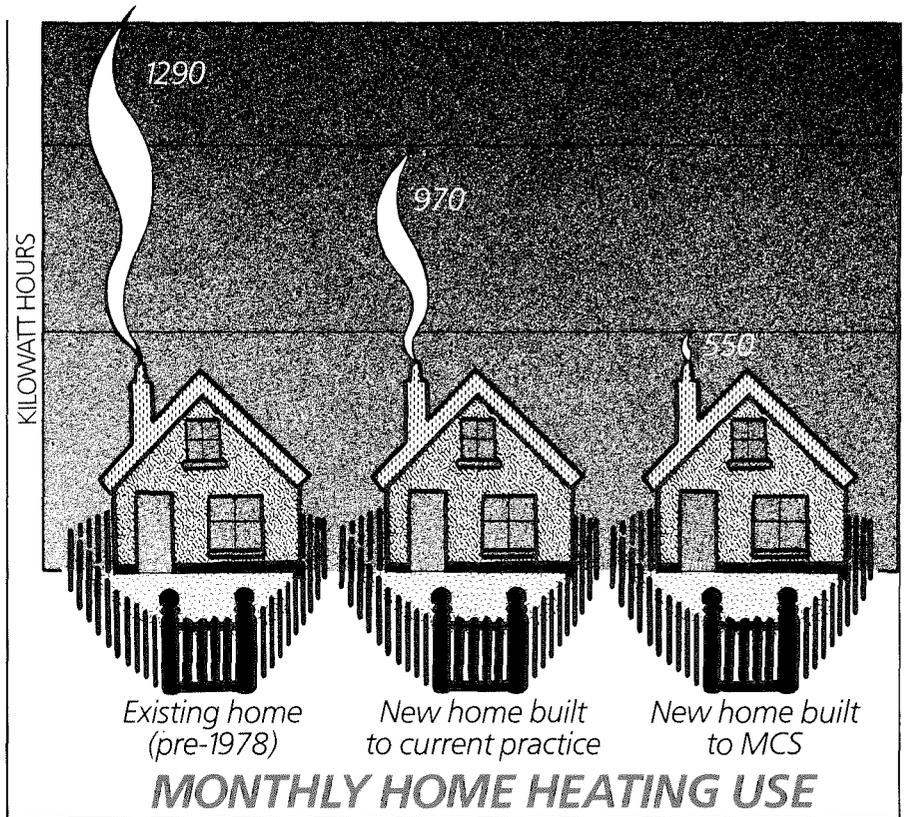
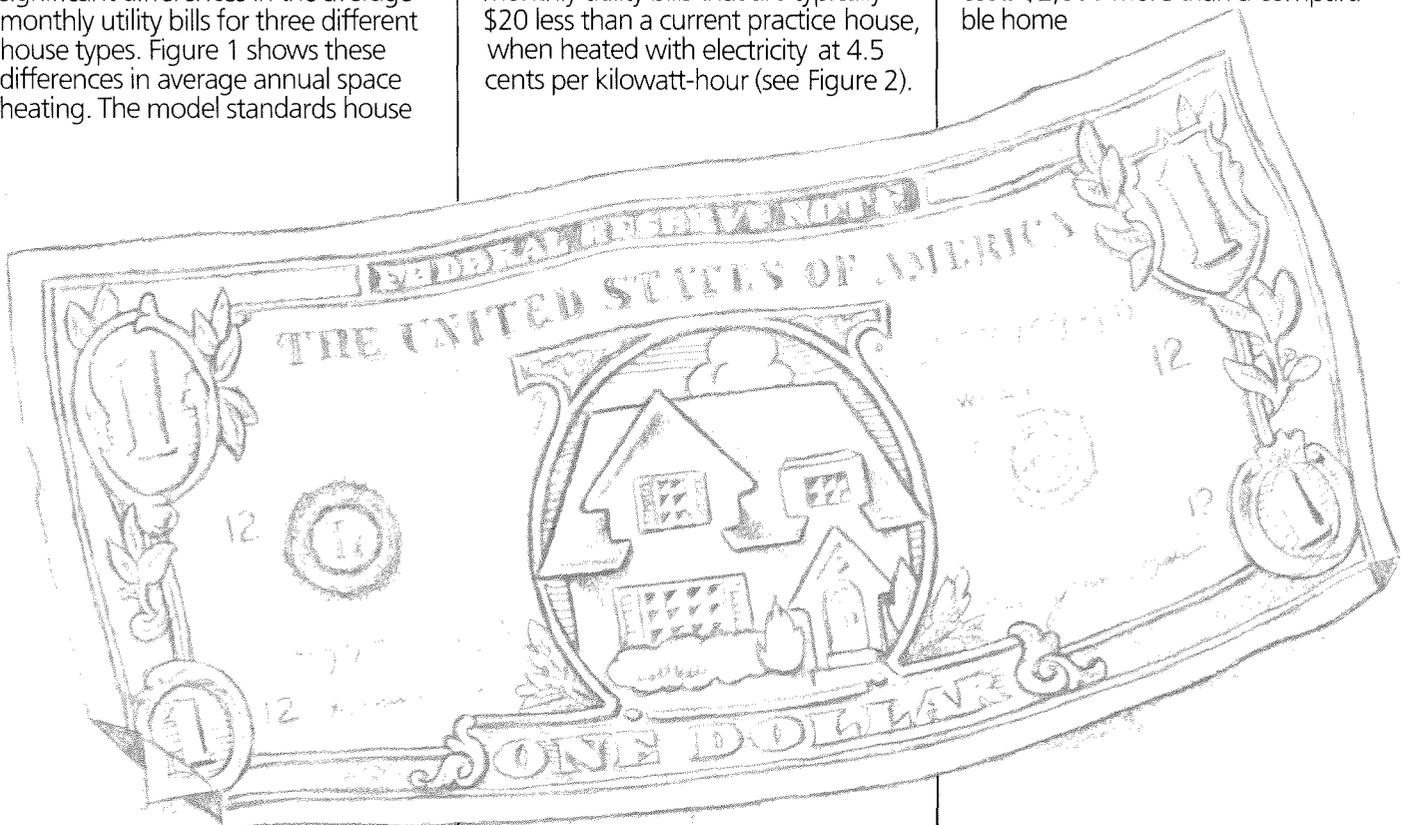


Figure 1

uses less than half the electricity for space heat than a house built in 1978, and 40 percent less space heat than a house built to current building practice. Thus, a 2,000-square-foot model standards house will have monthly utility bills that are typically \$20 less than a current practice house, when heated with electricity at 4.5 cents per kilowatt-hour (see Figure 2).

While \$20 per month may not sound like much of a savings, it can make a big difference. If the \$20 savings in utility costs are allocated directly to the mortgage, a homebuyer can qualify for a house that costs \$2,000 more than a comparable home



(assuming the loan carries a fixed interest rate of 10.5 percent, over 30 years). Factoring in these savings allows lending institutions to make more informed loan decisions, while at the same time helping to encourage energy-efficient housing in the Pacific Northwest.

But coming up with better numbers for the energy savings of energy-efficient housing was only part of the solution to lenders' problems. Lenders also wanted new loan application forms that are as easy to use as their current ones. These forms had to be able to handle fuel types other than electricity, such as fuel oil, natural gas and propane.

To develop these forms, the Council used data collected in 1987 as part of a comparison of heating costs using various fuels. The computed results from that study were then compared with data supplied by Northwest Natural Gas and the Montana Power Company, to make sure the numbers were reasonable. They were within 10 percent of the averages provided.

In addition, to ensure that the forms reflect true market conditions in different parts of the region, the Council tailor-made schedules for each fuel type and each individual county within a state. These county-specific schedules take into account local fuel prices. The schedules will be updated each year to ensure they remain current with changing fuel prices.

So far, the new forms and schedules have been received enthusiastically by lenders. The head of the valuation branch in HUD's Region 10 Portland office, Barry Wilson, deserves much of the credit for considering changes in the schedules. He says the new schedules "will give better estimates for utility costs than we've had available before." Wilson's boss, Diana Goodwin, director of the Office of Housing for HUD Region 10, is considering which format would work the best before implementing the new forms in Idaho, Oregon and Washington. Montana, which falls in HUD Region 8, is also considering implementing the change.

The Idaho Department of Water Resources has recently begun an ambitious Pilot Lender Project in the Idaho Falls area. The project's goal is to get the added value of energy conservation measures incorporated into the appraised value of houses built to the Council's model conservation standards and thus lower the debt-to-income ratio to finance these homes. According to Artie Dewey of the department, "a large part of the process will be to educate lenders who know little about the benefits of such a program."

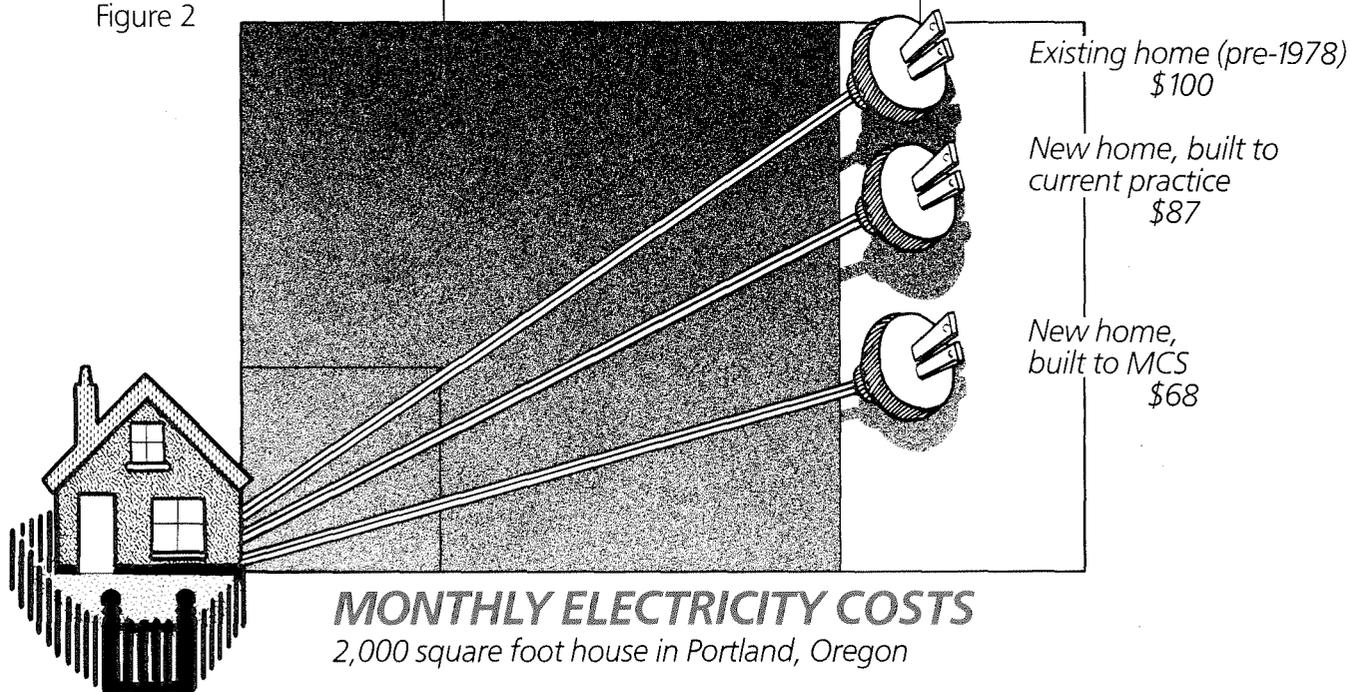
Dewey notes that the project will show it is in the lender's best interest to help the buyer of an energy-efficient house qualify for loans more easily. Not only will the lenders market more loans, but they will do so to buyers with lower monthly utility bills. Such buyers are better loan risks.

"We're trying to get lenders to accept this, not because they're good guys, but because they're smart guys," says Dewey.

In Montana, the Council is working with local HUD appraisers to introduce the new practice. Roger Linhart, manager of United Western Mortgage Corporation in Missoula, Montana, and current president of the local homebuilders association there, favors a better debt-to-income ratio for more energy-efficient homes.

"We know this is a more accurate way of estimating utility costs for qualifying buyers," he says. "It just makes sense." ■

Figure 2



by John Volkman

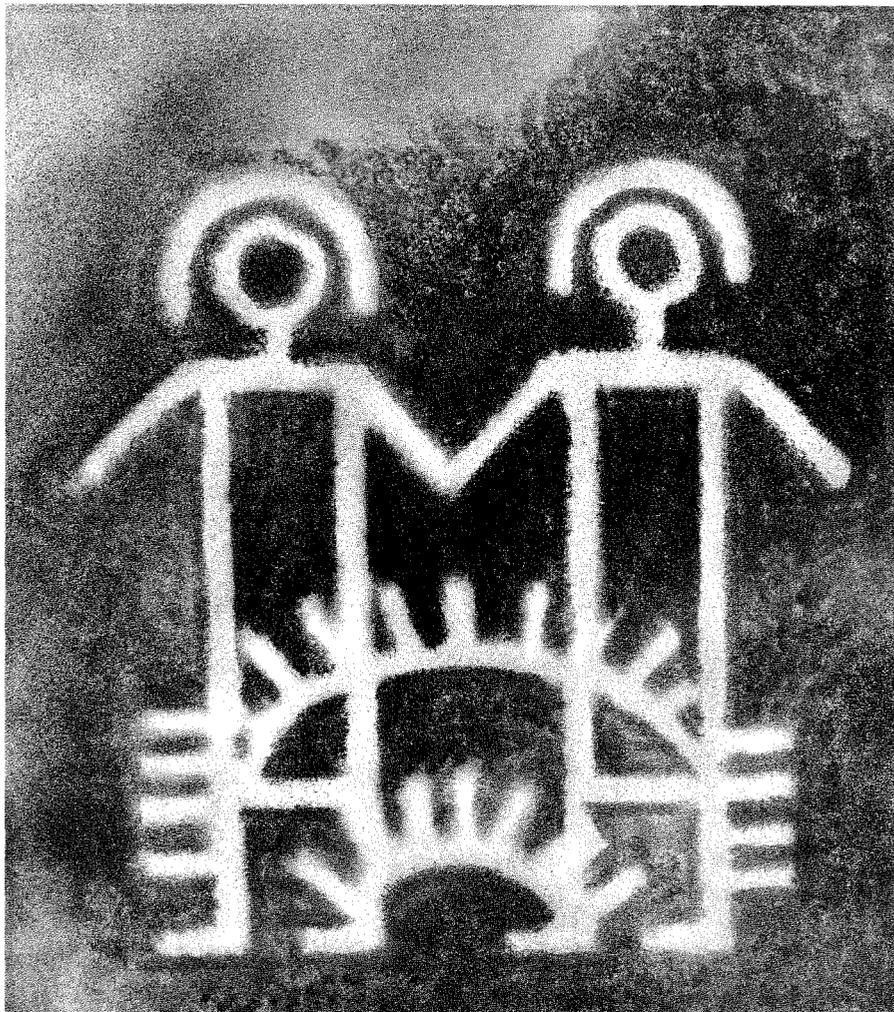
In a landmark development in the Northwest's Indian treaty fishing disputes, the states of Oregon and Washington, the Nez Perce, Umatilla, Warm Springs and Yakima tribes, and the U.S. Departments of Interior and Commerce have reached a comprehensive agreement for harvesting and rebuilding Columbia River fish runs.

The agreement grows out of a 20-year history of court litigation on the Columbia River, involving the interpretation of four 1855 Indian treaties. In the treaties, the Yakima, Warm Springs, Umatilla and Nez Perce tribes gave up their claim to much of the land in the Northwest, reserving to themselves homelands (reservations), and the "right of taking fish at all

the usual and accustomed places, in common with the citizens of the territory."

In the 1960s, the tribes' rights to fish were curtailed by Oregon and Washington because, by the time the fish runs returned to the tribes' upriver fishing sites, non-Indians in the ocean and lower river had already harvested most of the fish. Hence, "conservation clo-

Agreement Reached in Fisheries Feud



tures" were ordered by the states to prevent the tribes from harvesting what little was left and threatening the survival of the runs.

In the late 1960s and early 70s, the federal courts began to require the states to control non-Indian harvest in the ocean and lower river to provide greater opportunities to the tribes to fish at their upriver sites. In 1974, Judge George Boldt in Washington held that the states must manage the runs to provide the tribes with opportunities to harvest roughly half of the runs. In 1977, the U.S. Supreme Court upheld this principle, subject only to the qualification that income from Indian harvest should not exceed the tribes' "moderate living needs." Although these rulings took place in Puget Sound, they were applied to the Columbia River tribes in the U.S. v. Oregon case as well.

The states and the tribes reached an agreement in 1977 on how to share the harvest in the Columbia River. However, the agreement had several weaknesses, and after a few years, the parties found themselves back in court. One of the key problems was the continuing decline of salmon and steelhead runs, partly from new dams in the Columbia River and partly from ocean harvest.

The agreement grows out of a 20-year history of court litigation on the Columbia River.

The agreement the parties have just reached is broader than the 1977 agreement, and it will operate in a much different environment. The U.S./Canada Pacific Salmon Treaty of 1985 restricted the harvest of Columbia River fish stocks in the ocean, and regulatory mechanisms are now in place to control the ocean harvest. The treaty also pledges the two nations to rebuild critical salmon and steelhead stocks, particularly naturally spawning chinook stocks, by 1998.

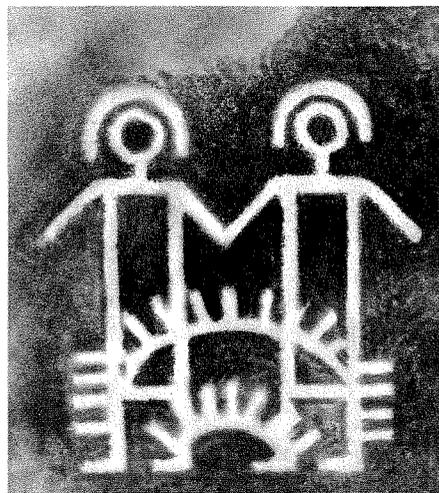
The second major difference between now and 1977 is that the Northwest Power Act and the Northwest Power Planning Council provide a program to fund efforts to rebuild upriver stocks. The parties are clearly relying on the Council's program to make rebuilding possible.

The third major difference is that the states and the tribes have been able to work cooperatively. This has paid significant dividends in the U.S./Canada Treaty negotiations, in the U.S. v. Oregon negotiations, and in Council activities.

The new agreement is designed to build on the U.S./Canada Pacific Salmon Treaty and the Council's Columbia River Basin Fish and Wildlife Program by: 1) controlling harvest on key stocks; and 2) providing a framework for increasing upriver fish production.

There are several issues that the agreement does not or cannot resolve. For example, throughout the agreement are commitments to supplement upriver runs with fish reared in hatcheries. Key unresolved questions are whether this supplementation will be effective, and whether supplementation will have acceptable impacts on wild fish stocks. No one at present can answer these questions to everyone's satisfaction.

Another problem, which ultimately made the State of Idaho unwilling to sign the agreement, involves wild steelhead. Idaho has two runs of wild steelhead, the smaller of which is called the "B" run. The B run consists of wild fish that return to their spawning ground at the same time the very strong run of upriver bright fall chinook returns. The upriver brights are a mainstay of the tribes' harvest. However, Idaho fears that fishing of the upriver brights could have serious adverse impacts on the B run. Idaho's Shoshone-Bannock Tribes have related concerns. The parties spent a lot of time on how much harvest could be permitted on the upriver brights without undermining the viability of the B run, but agreement could not be reached. These and other disagreements between the lower river states and tribes and Idaho interests may be discussed in federal court. ■



SHORTS



Five Super Good Cents utilities have received recognition for making a large portion of new homes in their service districts super energy-efficient this year. The Bonneville Power Administration, which sponsors the energy saving program, applauded the utilities' efforts at the Third Annual Super Good Cents Awards Banquet. The utilities include: Snohomish County Public Utility District, Lakeview Light and Power, Vera Water and Power and the City of Port Angeles Public Utility, all in Washington; and Unity Light and Power in Burley, Idaho.

New fish bypass facilities at John Day Dam on the Columbia River were awarded a national merit award for engineering during National Engineers Week this spring. The facilities, a system of submersible screens and channels to safely move ocean-bound juvenile salmon and steelhead away from the turbines and past the dam, were constructed as part of the Columbia River Basin Fish and Wildlife Program. The Portland District of the U.S. Army Corps of Engineers received the award from a panel of non-governmental experts. (Source: *The Dalles Chronicle*, The Dalles, Oregon.)

Oregon volunteers released 12 million salmon and steelhead fry last year as part of the Salmon and Trout Enhancement Program (STEP). STEP has been using volunteers to improve salmon habitat, set out hatch boxes for incubating young salmon and steelhead, and survey streams for their acceptability for producing more fish. The program was initiated in 1981 and is funded through the state Sport Fish Restoration Program. (Source: *The Oregonian*, Portland, Oregon.)

The British Columbia Hydro and Power Authority (BC Hydro) has joined the ranks of utilities choosing conservation over new generating resources. The Canadian utility, which had gone on record in recent years arguing against conservation as a resource, has now begun offering programs aimed at saving roughly 350 average megawatts. (Source: *Northwest Conservation Act Report*, 3429 Fremont Place North, Suite 308, Seattle, Washington 98103.)

Sport fishing in Washington for Pacific salmon and sturgeon brings a considerable sum of money into that state's economy, concludes a recent report called for by the state's legislature. The report indicates that sport fishing brings in far more than commercial fishing. However, the conclusions were tempered by numerous caveats. While the report found that commercial fishing in Washington only attracted a net profit of \$1.4 million (compared with sport-fishing values closer to \$44 million), it also pointed out that only non-Indian fishers within Washington's regulated waters were tallied. This number probably only represents a fraction of the actual sales, since a large portion of the state's commercial catch was determined by court order to go to the tribal fishery, and an even larger portion is caught beyond the Washington regulatory boundaries but still by Washington fishers. In addition, the study period runs from 1982 through 1985, coinciding with the devastating effects of El Nino on the fisheries. (Copies of the report, "Economic Impacts and Net Economic Values Associated with Non-Indian Salmon and Sturgeon Fisheries," are available from the Washington Department of Community Development, Ninth and Columbia Building, Mail Stop: GH-51, Olympia, Washington 98504-4151, 206-753-2200.)

The promise of inexpensive electricity from solar energy may soon be realized thanks to advances in the efficiency of photovoltaic cells. Researchers funded by the Electric Power Research Institute and based at Stanford University have developed new photovoltaic cells that have an efficiency of 28 percent, as compared to current cells that only achieve 15-percent efficiencies. One drawback of the cells is that they only make electricity from direct sunlight, not filtered or hazy light. But utility representatives in the sunny Southwest are paying close attention to the research. The goal is to develop a generating plant that could produce electricity from the sun for between 6 and 7 cents per kilowatt-hour, comparable to oil generation at \$25 a barrel. (Source: *New York Times*, Wednesday, March 30, 1988.)

CALENDAR

June 5-10 — Second "International Congress on Energy" in Tiberias, Israel. Sponsored by the Israel Ministry of Energy and Infrastructure. For more information: Dr. P. Glueckstern, IMEI, Box 29313, Tel Aviv, Israel 65121.

June 8-9 — Northwest Power Planning Council meeting at the Riverhouse in Bend, Oregon.

June 27-29 — American Public Power Association's 1988 National Conference in Seattle, Washington. For more information: American Public Power Association, 2301 M Street, N.W., Washington, D.C. 20037, 202-775-8300.

June 27-July 1 — "International Symposium and Educational Workshop on Fish-marking Techniques" at the University of Washington in Seattle. Sponsored by the American Fisheries Society and the U.S. Fish and Wildlife Service. For more information: Conference Management, GH-22, University of

Washington Extension, Seattle, Washington 98195, 206-543-2300, extension 348.

June 29-30 — Northwest Power Planning Council's first annual Salmon and Steelhead Round Table at the Rippling River Resort near Portland, Oregon.

July 13-14 — Northwest Power Planning Council meeting at the Edgewater Lodge in Sandpoint, Idaho.

August 10-11 — Northwest Power Planning Council meeting at Cavanaugh's Motor Inn in Kalispell, Montana.

November 8-9 — Energy EXPO '88, a trade show and conference for gas and electric energy conservation for commercial and industrial uses, in Milwaukee, Wisconsin. Sponsored by ANCO of Wisconsin. For more information: Kevin S. Anderson, Energy EXPO '88, ANCO, Public Service Building, 231 W. Michigan, Room 226, Milwaukee, Wisconsin 53201, 414-221-4801.

November 29-December 3 — "Housing for the 90s" at the Sheraton Tacoma Hotel, Tacoma, Washington. Sponsored by the Energy Business Association. For more information: Patricia Anderson, Energy Business Association, 420 Maritime Building, 911 Western Avenue, Seattle, Washington 98104, 206-622-7171.

A more detailed calendar of Council committee meetings and consultations is carried each month in *Update!* See order form on back cover.

Compiled by *Ruth L. Curtis*

NORTHWEST POWER PLANNING COUNCIL MEMBERS

Idaho

Northwest Power Planning Council
Statehouse Mall
450 West State
Boise, Idaho 83720
Telephone: 208-334-2956
Council Members:
James Goller
Robert Staxvik

Montana

Northwest Power Planning Council
Capitol Station
Helena, Montana 59620
Telephone: 406-444-3862
Council Members:
Morris Bruslett, chairman
George Turman

Oregon

Northwest Power Planning Council
1400 S.W. Fifth Avenue
Portland, Oregon 97201
Telephone: 503-229-5171
Council Member:
Robert Duncan

Northwest Power Planning Council
3090 Pigeon Hollow Road South
Salem, Oregon 97302
Telephone: 503-364-9926
Council Member:
Norma Palus

Washington

Northwest Power Planning Council
Washington State Energy Office
809 Legion Way, S.E.
Olympia, Washington 98504
Telephone: 206-566-8067
Council Member:
R. Ted Bottiger

Northwest Power Planning Council
Anderson Hall #34-36
North Ninth and Elm Streets
P.O. Box B
Cherley, Washington 99004
Telephone: 509-359-7352
Council Member:
Tom Thulove, vice chairman

Central Office

Northwest Power Planning Council
851 S.W. Sixth, Suite 1100
Portland, Oregon 97204
Telephone: 503-222-5161
Toll Free: 1-800-222-3355
(1-800-452-2324 in Oregon)
Executive Director: Edward Sheets
Information Director: Dulcy Mahar



is published bi-monthly by the Northwest Power Planning Council, 851 S.W. Sixth, Suite 1100, Portland, Oregon 97204. Reprinting is encouraged. Please credit Northwest Energy News.

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.

Executive Editor: Carlotta Collette
Art Director: Stephen Sasser
Special Departments Editor:
Ruth Curtis
Production: Marty Todd

COUNCIL PUBLICATIONS ORDER FORM

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

Publications

- 1987 Columbia River Basin Fish and Wildlife Program
- 1986 Northwest Power Plan
- 1987 Northwest Power Planning Council Annual Report
- 1988 Draft Annual Report
- (9-88) Proposed Amendment Regarding Protected Areas
- (2-88) Staff Issue Paper: Plans for a Technical Update to the 1986 Power Plan
- (6-88) Economic, Demographic and Fuel Price Assumptions (draft)
- (8-88) Demand for Electricity in the Pacific Northwest (draft forecast)
- (7-88) Model Conservation Standards for New Commercial Buildings
- Western Electricity Study briefing papers:
 - (3-87) Western System Overview
 - (4-87) Electricity Use in the Western U.S. and Canada
 - (14-87) Interregional Transactions
 - (7-87) Existing Generating Resources (draft)
 - (13-87) Future Resources (draft)
 - (3-88) Load/Resource Balances (draft)

Mailing Lists

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

- Northwest Energy News* (this bimonthly magazine)
- Update!* (monthly public involvement newsletter that contains the Council meeting agenda and a more detailed publications list)

Name _____

Organization _____

Street _____

City/State/Zip _____

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

Northwest Power Planning Council
851 S.W. Sixth, Suite 1100
Portland, Oregon 97204

BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 1709
PORTLAND, OR