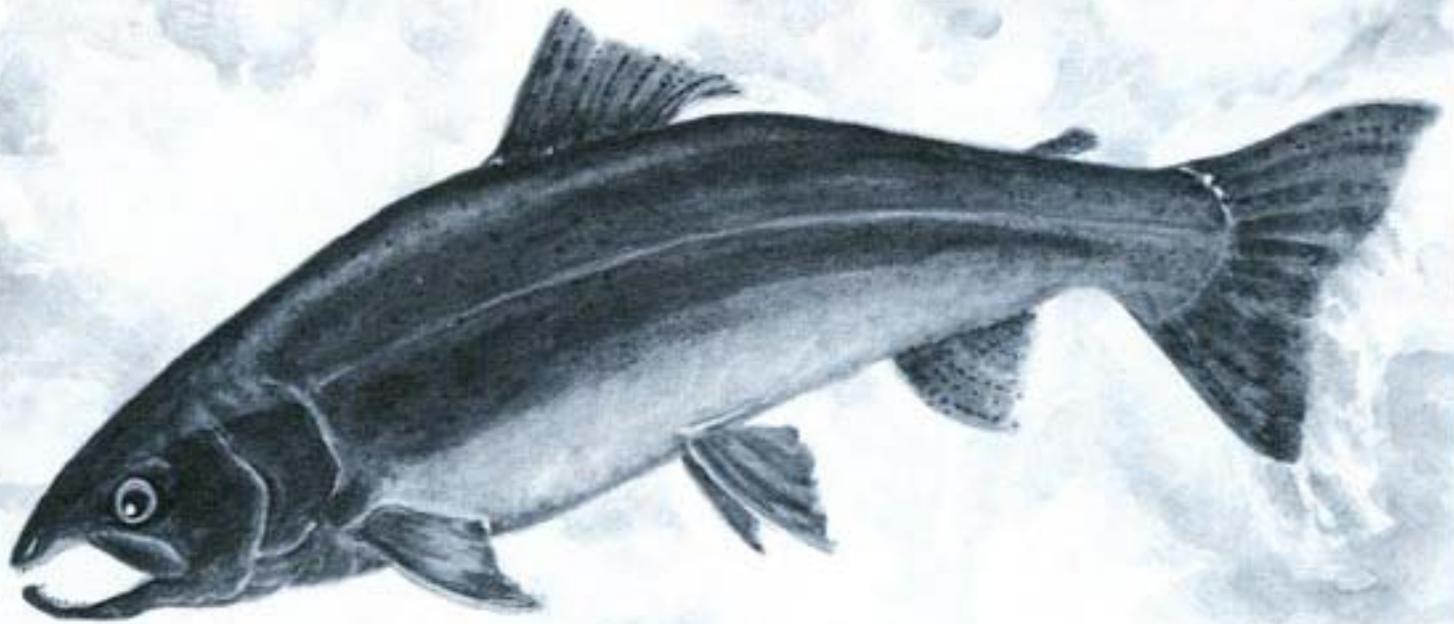


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This issue's cover illustration is by Nicola Yarbrough.

from the CHAIR

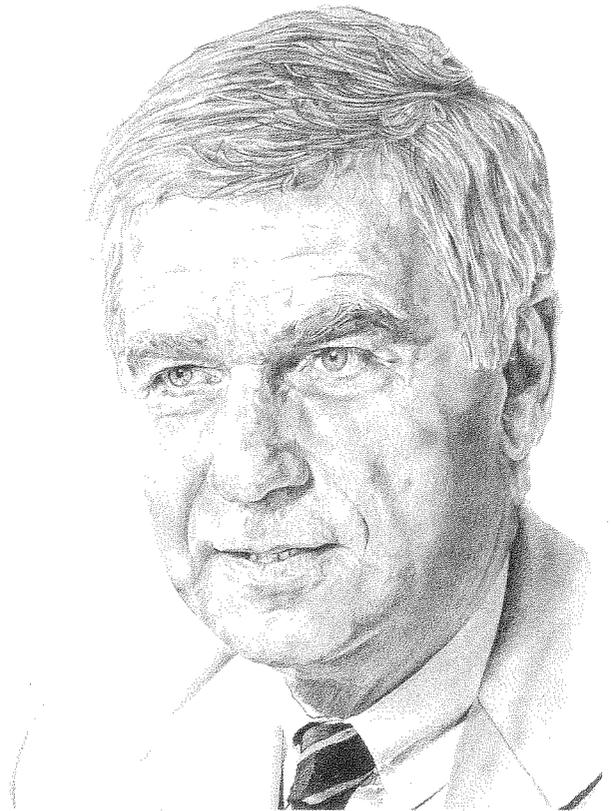
This spring, federal court Judge Malcolm F. Marsh ruled that the National Marine Fisheries Service's 1993 biological opinion on the effect of hydro-power operations on endangered or threatened Columbia River Basin salmon was arbitrary and capricious. The judge ordered federal agencies to consult again. He said, "the process is seriously, significantly, flawed because it is too heavily geared toward the status quo ... when the situation literally cries out for major overhaul."

When we adopted our Strategy for Salmon in 1992, we said the actions that we could take immediately would not be enough to meet our rebuilding goals. Additional actions would be needed. We said we would reopen the question this summer, looking for what else we can do. Do we need even greater flows to speed salmon past our dams? Can we further modify the dams themselves? What will it take?



We expect this to be contentious because whatever we come up with will be expensive. That's why we stressed in our Strategy for Salmon the need to involve as many people with as varied interests as possible in both planning and carrying out the plans. In the judge's words, we are engaged in a "major overhaul."

ACT NOW.



Oregon's Governor Barbara Roberts and Senator Mark Hatfield say the Northwest has a credible salmon recovery plan that must be implemented if the region hopes to avoid court-ordered solutions.

by John Harrison

This generation must not be the one that presides over the demise of Columbia Basin salmon runs," Oregon Governor Barbara Roberts said in welcoming representatives of Northwest fishery agencies, dam operators and Indian tribes to the Northwest Power Planning Council's second annual Salmon Strategy Progress Review in March. The agencies, operators and tribes are key implementors of the Council's Columbia River Basin Fish and Wildlife Program, which includes the Strategy for Salmon. "Finger-pointing isn't going to help fish. We need to know what you are doing and how aggressively you are doing it."

Roberts noted that some people want to blame nature for declining salmon runs, citing poor

survival conditions in the ocean or drought in the Columbia Basin.

"And yet we know that prior to mankind's development activities, fish populations were healthy enough that they could absorb bad ocean conditions," the Governor said. "We must make that the case again."

Roberts said there is a "long list of recognized contributors" to the decline of salmon populations, including past harvest practices, unscreened irrigation diversions, poor timber and road-building practices, excessive grazing near streams and past hatchery practices. "Most of all, we know that the mainstem dams, while clearly not the only harvester, are the major fish harvester, no matter whose figures you use."

Success in rebuilding salmon runs doesn't come for free, Roberts said. She noted that salmon recovery has its critics, particularly on the cost issue.

"Redoubled efforts are needed to be sure the money we devote to this cause is being spent wisely," the Governor said. "However, if it were cheap, someone already would have done the job for us. It took over a century for the salmon runs to reach the shape they're in, and it will take much longer than a decade to bring them back to sustainable levels."

Roberts urged progress review participants to "... think like a fish. Don't be afraid to swim against the flow. Don't focus on process and paperwork."

Senator Hatfield echoed some of the same themes in his keynote address to the river managers.

"We cannot claim success in terms of immediate fish returns, but we have made progress, scientifically as well as politically, and increased public awareness," Hatfield said. "And perhaps most significantly, we have not been at it long enough to know whether the measures we are putting into practice and into place are working. That may take several generations of salmon to assess fully. But let's not hesitate to remind ourselves, and especially the people of this region, that we are making progress on several fronts."

Hatfield noted increased flows in the mainstems of the Snake and Columbia; federal funding for salmon recovery actions, such as screening irrigation diversions;

"It took over a century for the salmon runs to reach the shape they're in, and it will take much longer than a decade to bring them back."

.....

and improved fish production practices at hatcheries. He also noted areas where progress is lagging, such as in natural production improvements, alternative harvest techniques, drawdown studies and a number of projects to rebuild weak runs.

"I'm worried the region is beginning to drift and lose sight of its collective strength, the very qualities that produced the Strategy for Salmon," the Senator said. "I'm speaking of lawsuits and the threats of lawsuits. We worked hard to develop biologically credible recovery plans, largely in the

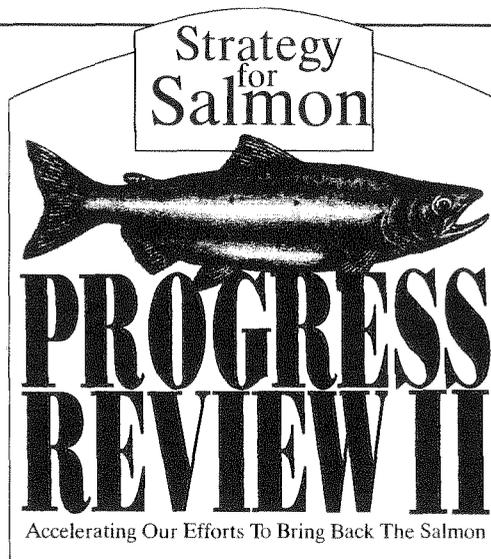
hope of retaining regional control and keeping it out of the courts. This effort could be squandered in a minute by one judicial opinion.

"Why go to all the effort on the one hand, and on the other invite an unelected federal judge to make a decision that could nullify your entire plan?" Hatfield said. He urged the agency heads, "do not underestimate the potential for success on the region's own terms ... Don't think just because the federal government has the hammer of the Endangered Species Act in its corner it knows how to rescue the salmon."

He said the Strategy for Salmon "... seems to improve with age — like a fine wine," and he said the plan must be implemented fully.

"The most important part of that plan is implementation. We cannot have selective implementation. I call on all federal agencies to implement the Council's plan. It's an opportunity to serve as an example of success in dealing with the Endangered Species Act," he said.





Conclusions

By the end of the day-long Strategy for Salmon Progress Review, participants noted these particular points of agreement:

- Additional water has been provided in the spring and early summer to aid salmon migration in the lower Snake and Columbia rivers.
- Continued evaluation of the relationship between river flows, velocity and salmon survival is a very high priority for the region.
- It is important to evaluate the impacts of salmon recovery actions, such as increased river flows, on non-seagoing fish and to protect such species.
- The region needs to speed the evaluation of additional measures to improve salmon survival.
- The region needs a firm commitment to mitigate the adverse effects of reservoir drawdowns or other salmon recovery actions.
- When decisions are made to store water behind reservoirs in the upper Columbia Basin or release water from those reservoirs for power, flood control, salmon or other purposes, there must be an accounting system in place to clearly identify the purpose of these actions.
- Harvest limits in the Strategy for Salmon are being met, and there was agreement on the importance of targeted fisheries and selective gear in the future.
- Numerous federal, state and private salmon habitat improvements are under way. There was agreement that this on-the-ground work needs to be accelerated and coordinated among federal, state and local interests.
- Efforts to accelerate screening of irrigation and other water diversions to protect salmon must continue. Federal funding is needed to help with this work.
- The Soil Conservation Service was asked to catalog improvements being made in the Columbia River Basin by private landowners.
- Hatchery practices need to be improved. Fishery managers committed to review new guidelines and incorporate them as policy.
- Efforts to learn about the status and trends of naturally spawning fish populations will be accelerated.
- The National Marine Fisheries Service committed to expeditiously review a limited number of supplementation experiments.
- There was agreement on the need to evaluate actions in the salmon strategy to see if they are producing results.
- The group responsible for independent scientific evaluation will be in place by this fall.

GOVERNMENT To GOVERNMENT



by John Harrison

Columbia River Basin Indian tribes want quicker action on improving fish and wildlife populations, representatives of 15 Indian tribes told the Northwest Power Planning Council at a day-long meeting in March.

We had an open exchange of ideas," Council Chairman R. Ted Bottiger said. "We want to be sure that our fish and wildlife program responds to the mandates of the Northwest Power Act as well as to the needs, aspirations and goals of tribal communities. We believe the obligations of the federal Endangered Species Act, the Northwest Power Act and federal trust obligations to Indian tribes must be fulfilled in unison. These are all legal mandates. They are equally important."

Nelson Wallulatum, chairman of the Wasco Band of Confederated Tribes of the Warm Springs Reservation, said, "We want to be in the planning process so we know our treaty rights are being protected. We've been talking and talking and talking. We need to be moving, doing something out in the field."

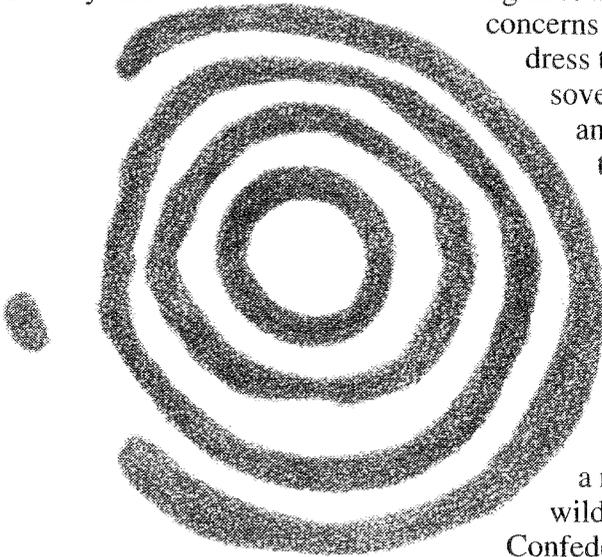
Other tribal leaders said the Council needs to assert a stronger

leadership role in securing funding for fish and wildlife improvements. "That's a fair statement," Bottiger said. "We could have put more pressure on the Bonneville Power Administration to fully fund fish and wildlife measures."

Oregon Council member Angus Duncan urged the tribal leaders to get involved in Bonneville's effort to improve its efficiency. "Bonneville is a steward of the river and its fish and wildlife," Duncan said. "As Bonneville becomes a more efficient supplier of power, it must also become a more efficient steward of the resource."

Henry SiJohn of Idaho's Coeur d'Alene Tribe said he is frustrated that "we have to jump through so many funding hoops" to get projects under way. "The dams were built only for profit," he said. "There was no concern for the impact on Indian tribes."

Samuel Penney, chairman of the Nez Perce Tribal Executive Committee, said he too was frustrated by slow progress in funding fish and wildlife improvements. "The Nez Perce Tribal Hatchery has been delayed since 1982," Penney said.



Not all Columbia Basin tribes have the same concerns, delegates to the conference said. For example, Eddie Palmanteer of the Confederated Tribes of the Colville Reservation, said tribes located in those areas of the basin where dams permanently block salmon passage are concerned about protecting and rebuilding populations of resident fish and wildlife. "We lost our anadromous fisheries to Chief Joseph and Grand Coulee dams. The Upper Columbia tribes have different concerns than the Lower Columbia tribes. We are concerned about resident fisheries, reservoir fluctuations, wildlife, eagles and recreation on Lake Roosevelt."

Southern Idaho tribes also place greater emphasis on issues other than salmon restoration, said Lindsey Manning, chairman of the Shoshone-Paiute Tribes of the Duck Valley Reservation, which straddles the Idaho-Nevada border. Manning said a critical issue for his tribe is protecting and re-

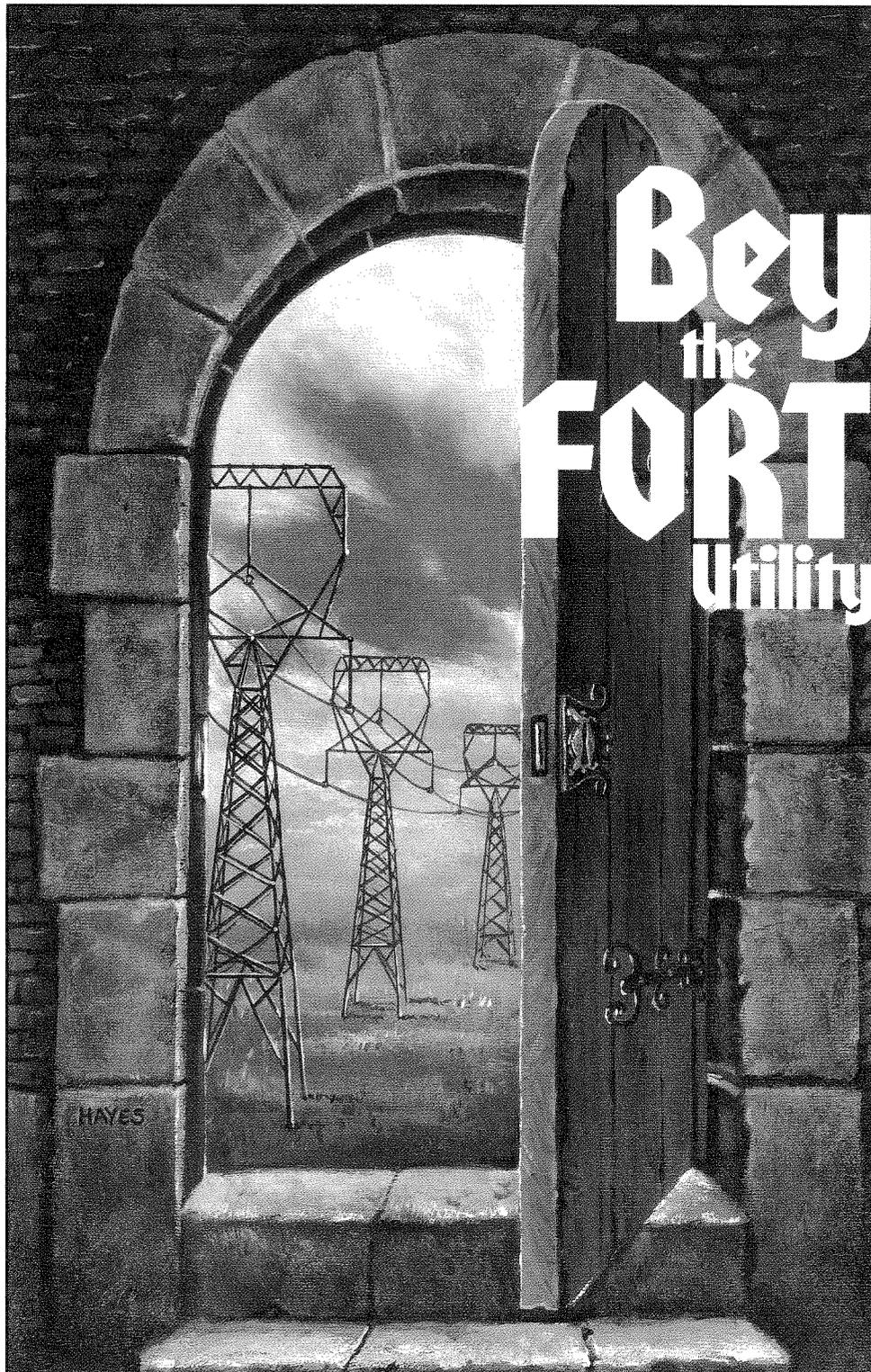
storing wildlife populations and habitat on the reservation and the surrounding area. "When I grew up, we didn't have salmon," he said. "In our refrigerator we had deer meat and potatoes."

Bottiger said the Council recognizes the diversity of tribal concerns and is working to address them. The tribes are sovereign nations, he said, and as representatives of the Northwest states, the Council takes its government-to-government relationship with the tribes seriously.

Tribal members noted the importance of that relationship, too. For example, Bill Yallup, a member of the fish and wildlife committee of the Confederated Tribes and Bands of the Yakama Indian Nation, said

the conference with the Council was "another step toward the continued development of our partnership of governments." He added, "We are firmly committed to this concept and are willing to devote the resources necessary to ensure that this concept becomes a reality." ■





Beyond the FORTRESS Utility

by Carlotta Collette

The role of electric utilities is changing. How will those changes affect the cost of electricity, energy-efficiency programs and the goals of the Northwest Power Act?

It was generally considered to be as solid as an old granite wall and just about as impenetrable. Secure in its autonomy, the electric utility industry, for its first half-century, was a model monopoly. Vertically integrated, it built and owned the plants that produced the power it sold.

It either owned or had fairly exclusive access to the power lines. It even owned the meters that tracked sales at every home and business where the power was used. While state or local boards regulated individual electric companies, even the regulations often tended to fortify rather than challenge utility independence.

All of that is, has or will be changing, depending on who you talk to. New technologies that allow people outside utilities to build their own power generators; new transmission technologies and policies that broaden access to markets; current low natural gas prices; and comparatively inexpensive, modular, gas-fired power plants have all contributed to an opening of the electric utility industry to new participants. Independent power producers, industries that generate their own electricity as well as the heat they require for manufacturing, and power brokerage firms that buy and sell electrical supplies to utilities and industries have all come into the business. They are blurring the distinctions between producers and marketers, as well as between wholesale and retail transactions.

Federal legislation enabled or at least accommodated these changes. The Public Utility Regulatory Policies Act of 1978 made it easier for outside developers to produce electricity to sell to utilities. The National Energy Policy Act of 1992 opened the door wider by exempting non-utility generators from some regulations.

What all of this means to the industry is competition. As newcomers enter the electric industry, they carve for themselves a piece of the market. Whether the competition will lead to "price wars" among utilities to charge the lowest power rates, or a drive to excel in the quality of service utilities provide is one of the key issues being debated.

Whatever form the region's electricity industry takes as it comes through this transition will influence the Northwest's ability to meet goals established in the

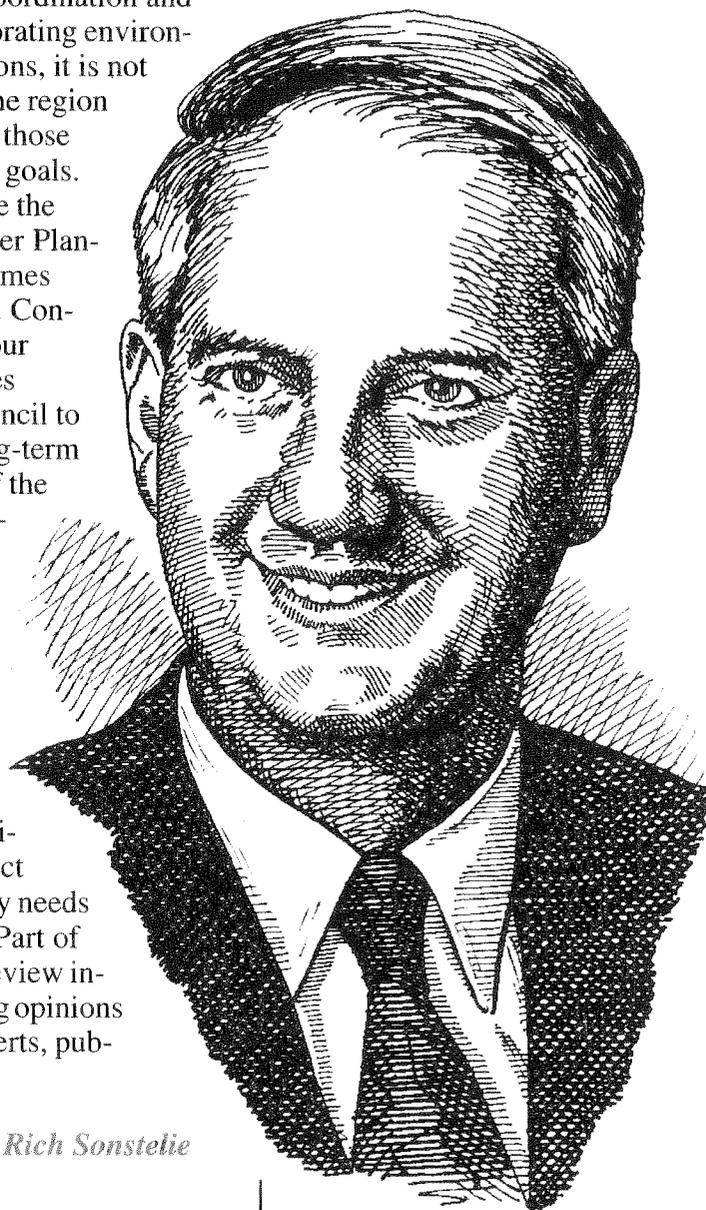
Northwest Power Act of 1980 and reaffirmed by each Northwest state since then. Those goals include ensuring that Northwesterners will continue to have low-cost and reliable electricity without jeopardizing the environment to secure that electricity. Cost-effective energy conservation and the development of renewable resources that rely on sunlight, wind or geothermal power are two of the resources the Power Act calls for to keep costs — both capital and environmental — down. If electricity-producing resources are developed without coordination and without incorporating environmental protections, it is not clear whether the region can accomplish those power planning goals.

This is where the Northwest Power Planning Council comes into the picture. Congress and the four Northwest states formed the Council to plan for the long-term energy needs of the region. As it begins its fourth regional power plan, the Council is trying to determine where the industry is heading and how that new direction will affect future electricity needs and resources. Part of the Council's review included soliciting opinions of industry experts, pub-

lishing a discussion paper on the topic and hearing comment on the paper. Some of that comment, as well as remarks on the issue from other sources, are excerpted below.

Rich Sonstelie, chief executive officer, Puget Sound Power and Light¹

This is a very timely subject. We're in the middle of an industry that is very dramatically changing. There's no single, clear path. There's a lot of uncertainty out there in that future we're moving into, and since the stakes are so



Rich Sonstelie

high, for our customers, for our environment and for our communities, working together on this and discussing this the way we are now is critical.

Our vision: We're eager for the competition because it makes good sense for our customers, and that's what we're really all about. They're already benefiting from some of the things that have been going on in recent years. Competitiveness has had a very large impact on cost awareness. In theory, regulation provides plenty of incentives to control costs. Somehow, competition seems to provide even more.

We do try to minimize costs and should try to minimize costs. The question is do you minimize them in the short run or in the long run. There can be quite different choices made depending on how you approach that particular equation.

Our consumer panels have spoken very clearly about their concern that we follow a path for a sustainable energy future for the state of Washington and for our customers. It's a responsibility we take very seriously.

What has this competition meant for us? It has meant that we have lower-cost options available to us in generation, and that's been good. We have an incentive and a commitment to reduce costs and to do a better job of identifying value produced to customers, and that's good. We also maintain a continuing commitment to take the long view in terms of environmental costs and environmental impacts, and also the broad view, looking at

the interests of all our customer groups.

Are the new entrants to our business who compete with us, going to have the responsibility to pay all the costs of being in this business? That's clearly an unanswered question. Those costs include environmental costs and social costs, and they also have to do with financing costs.

Governor Lowry has made it very clear that he puts jobs and the economy as number one in this state. We clearly need healthy utilities that are prepared to step up to their responsibility to provide for that growth.

I hope we can continue to address issues like renewable resources, a sustainable energy future, the environment and demand-side management. I think frankly, there is some question of that.

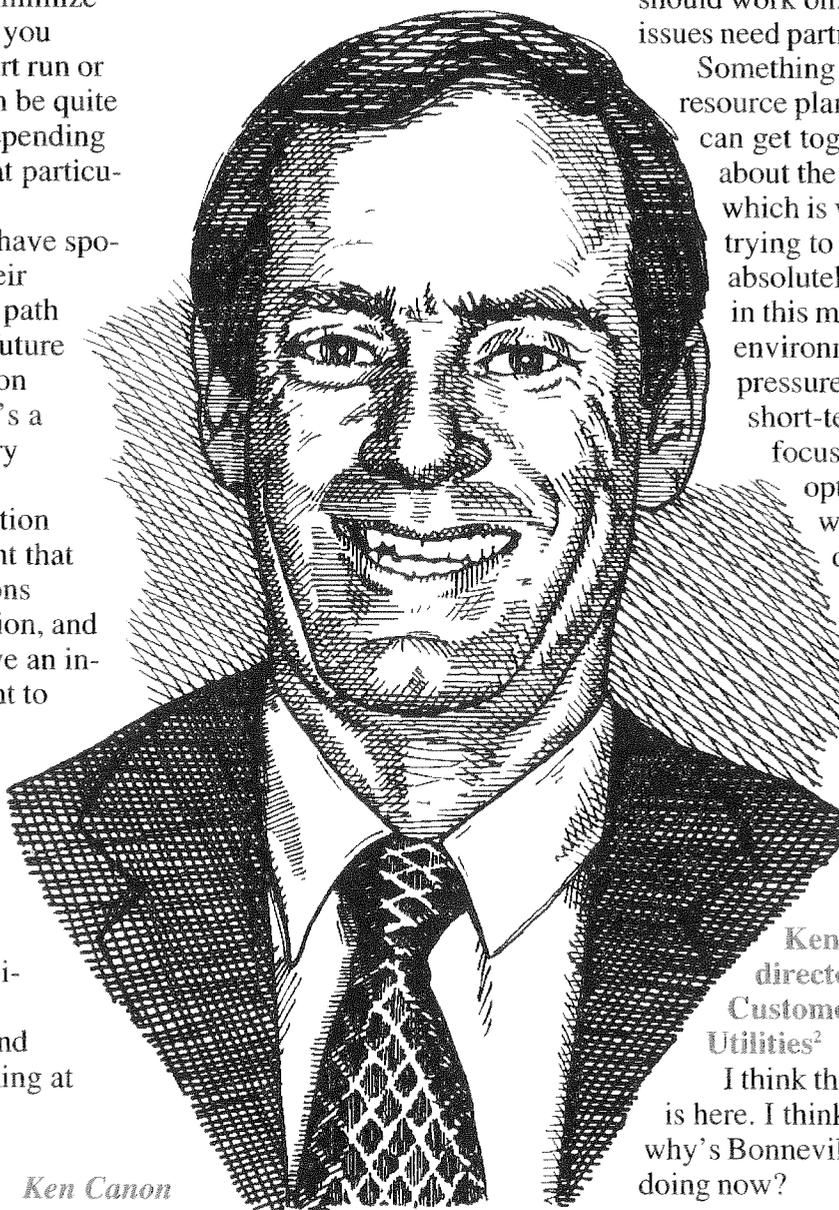
Our customers put a very high value on quality of life, and on environmental issues. Planning so far has taken a fairly long view, but there is a very real threat that immediate price pressures can cause an extremely short-term orientation by all electric utilities and in fact by all the non-utility participants in this competitive environment. That would be a tragedy. It's something we all should work on. These critical issues need partnerships.

Something like integrated resource planning, where we can get together and talk about the public interest, which is what we're all trying to serve here, is absolutely vital, especially in this more competitive environment where there is pressure to become more short-term

focused. The kinds of options we look at will be different for different utilities, but they all need to be held to the standard: are they serving the long-term public interest. Integrated resource planning is how you do that.

Ken Canon, executive director, Industrial Customers of Northwest Utilities²

I think the utility transition is here. I think it's now. If not, why's Bonneville doing what it's doing now?



Ken Canon

The Council's restructuring paper kind of started in the middle. It said, there's a lot more competition out there and these three things are forcing it: technology, natural gas and regulatory reform.

Why would those things force competition? They wouldn't. Those are the means people are using to be more competitive. What is forcing competition are customers out there who are saying they want a better product. They want a lower price. They want more options. And they want better service. These technologies, natural gas changes, regulatory reforms are allowing the utilities to respond to those legitimate customer demands.

Another point that I think is important is the fact that our "unique" federal hydropower system probably isn't all that unique anymore. It was unique in 1979 and 1980, when it was producing 3-mill power. But it's not as unique now when it's producing 27-mill power, and you can compare that to 30 or 35-mill power from combustion turbines or cogeneration.

To the extent that it's still the base, it's a huge base. But to the extent that that huge base rises very much in price, I fully believe you're going to see a lot more independent power production. That's happening already. Just look at the number of cogeneration facilities that are being built. Utilities are also saying, "Why should we go through Bonneville anymore if what they can buy it for is essentially what we can buy it for?"

It's going to be very challenging for the Council to operate in this new environment. To the extent the Council gets into regulatory endeavors, you will be snapped back very quickly to the Northwest Power Act. The Act says the Council is to plan for the

What is forcing competition are customers out there who are saying they want a better product.

Ken Canon

obligations of the [Bonneville Power] administrator. The Council is not to interfere with the ability of individual utilities to undertake their own resource construction.

The Council is much more adept politically and institutionally, I believe, to be kind of a "white horse" type of institution, one that is above the fray. It can shine the bright light of truth, based on good analytical work, on decision-making.

If I were on the Council I would say, "These are the criteria we think are important to use to judge resource choices." You can show the consequences for doing something else — not from a regulatory standpoint, but from an analytical standpoint.

Another issue that's really frustrating is this notion that only industries create stranded investments³ for utilities. How does a utility deal with it when they weatherize a house, and the homeowner then converts to natural gas? It's the same issue, maybe a different magnitude, but the same issue.

My members have stranded investments all the time. They invest in something that doesn't work out. They can't meet the market, and they have to close facilities. That's the nature of life.

The only time stranded investments are viewed as bad is if an industry wants to get onto the wire and buy power from someplace else. So all this discussion of stranded investments is just motivating industry to say, "We need to get off the system, because people are trying to regulate what we can do even more."

Columbia Steel just said, "Portland General Electric is too expensive, we're going to hook up to Pacific Power." And they did. James River is selling product today for the same price they sold it at in 1980. All their costs have gone up. Their wood costs have gone up 100 percent in the last three years. Their electric costs have gone up phenomenally. So they're doing a lot of things to try to be competitive.

Bruce Bosch, manager and chief executive officer, Clark County Public Utilities⁴

We're certainly seeing competition at the wholesale level. Clark Public Utilities, as you know, has 120,000 customers that we serve in southwest Washington. We recently sent out a request for generating proposals. As we looked at the 31 responses, we were rather amazed at the competitive nature of those projects. The bulk of them were combustion turbines, but it was also interesting to see some of the renewables proposals we received, and even Louis Dreyfus made an energy and power brokering proposal. That's something we never envisioned, but it was a very serious and legitimate proposal.

Our integrated resource plan has

narrowed those projects down to three, and frankly, as you do a competitive analysis, those resources appear to be competitive with Bonneville's forecasted rates over the next 15 to 20 years. That's rather startling to us because Bonneville has always maintained a healthy economic advantage over other generating proposals. That verified to us that competition at the wholesale level is upon us.

We are looking also at the possibility of retail competition. Some of our customers have indicated that they are looking for other sources of generation based upon our own rates. If they continue to go up, we cannot count on,

especially the large industrial customers, as a core group any longer.

The next phase the industry will be faced with will be self-generation. The ability, for example, to site various

sizes of combustion turbines is very much a threat in terms of competition. These types of projects lack the transmission costs, the distribution

costs, administrative overhead costs that utilities traditionally carry with them as part of their rate component. Once the ability to generate is competitive with other sources, they simply will be able to come in and provide energy at a rate equal to or even less than the local utility.

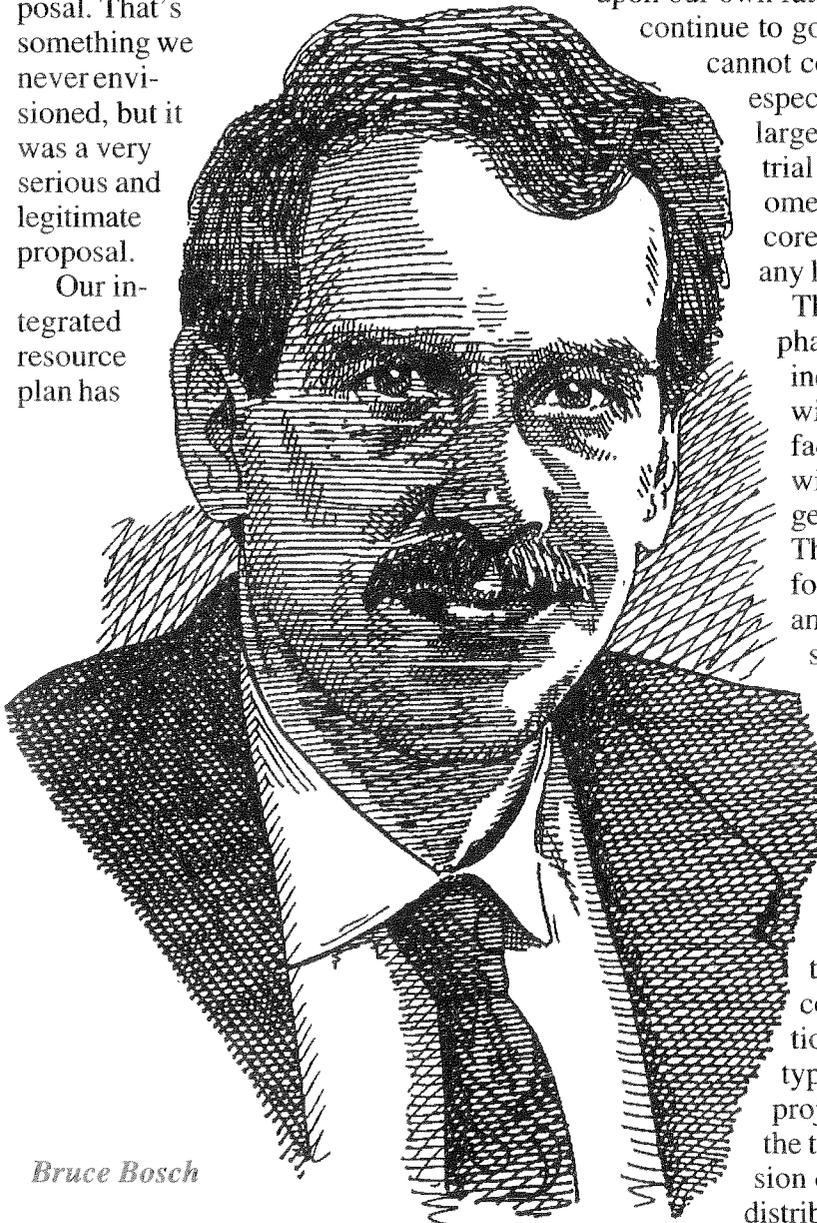
We need to keep in mind that electricity sales nationwide are a \$160-billion industry. With that kind of money, it will attract competition. If generation can be brought down to a smaller scale, even our residential customers could be given the opportunity to get into some kind of self-generation. That would essentially render the local utility as simply a back-up facility.

The real issue here is not so much "commodity versus energy service," as much as it is how do you deal with achieving the societal goals that center around, in particular, conservation programs. Do you try and have a regional subsidy, or do you find some other way to maximize conservation programs?

Conservation, as we get into a competitive environment, has to be shifted to the local utilities for funding and implementation. I strongly believe that the two-tiered rate proposal that Bonneville is developing⁵ will help promote this at the local level and help take away the need for regional implementation of conservation programs.

I differentiate "regional implementation" from "regional planning." I think the implementation and funding needs to be done at the local level. I think conservation planning has to be regional. If it has to be mandatory, that's OK. It just makes good sense.

Our integrated resource plan showed that the lowest-cost [mix] for us included some diversification of our resources, not



Bruce Bosch

maintaining all of our current [power] purchasing level from Bonneville, but diversifying the generating side. Interestingly enough, the lowest-cost mix included a very aggressive demand-side management program.

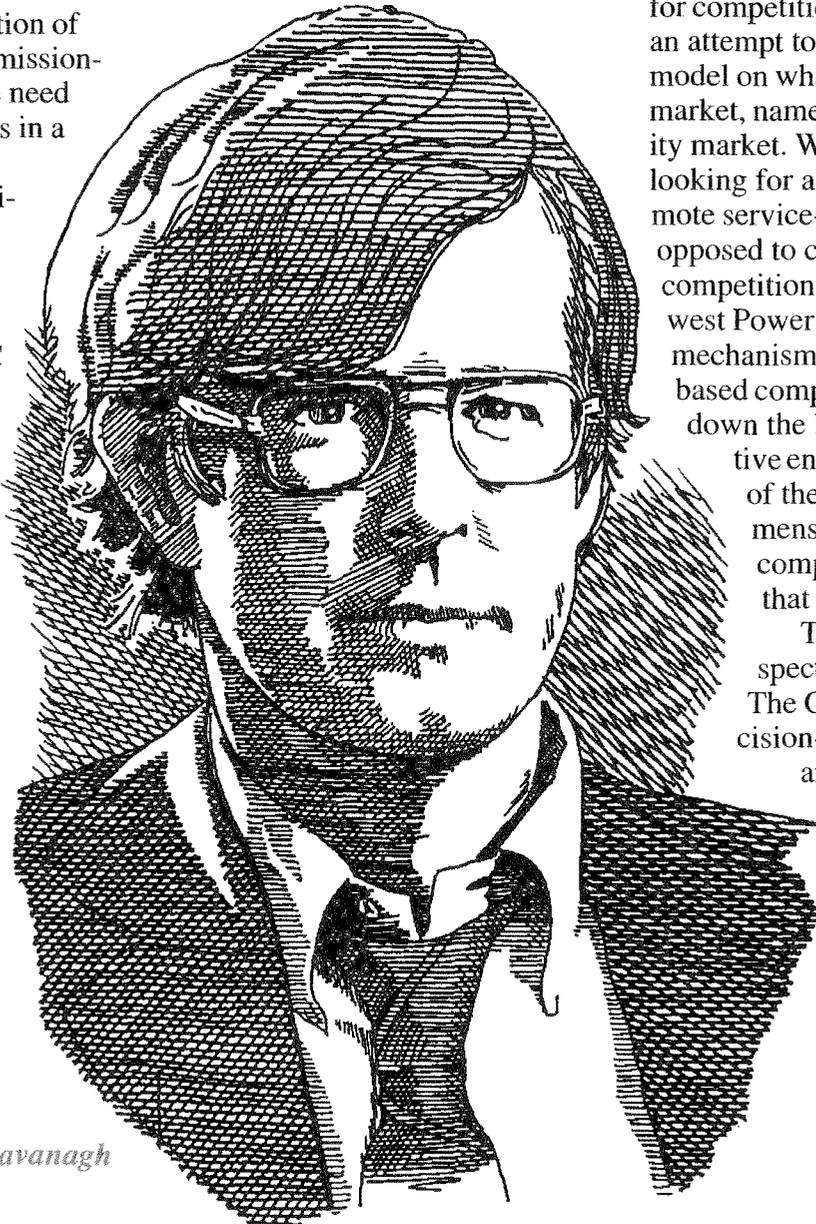
Ralph Cavanagh, Northwest energy project director, Natural Resources Defense Council⁶

This is not a debate over the relative merits of emerging competition and entrenched monopoly. The issue is how best to structure a more competitive future at both wholesale and retail levels. In resolving that question, it is important to recall the admonition of the National Association of Regulatory Utility Commissioners (NARUC) about the need to align societal interests in a least-cost energy future with the interests of utilities' shareholders.

The vision of the electricity business emerging from NARUC and many other sources is one that uniformly emphasizes competition and choice, but acknowledges fundamental differences between wholesale and retail markets. In the wholesale marketplace, where utilities buy and sell power for resale, the goal is to minimize bulk power costs. Policy-makers are trying to make generation more competitive and to offer entrepreneurs open access to transmission systems.

What we should be looking for are measures to promote service-based competition as opposed to commodity-based competition.

Ralph Cavanagh



Ralph Cavanagh

Retail electricity markets, by contrast, turn on quality and quantity of energy services. Residences and businesses have no interest in acquiring or reselling kilowatt-hours. They are seeking the heating, lighting, mechanical drive and other services that kilowatt-hours provide. Consumers' choices about retail service are expanding steadily, in the form of opportunities to self-generate or substitute new end-use equipment that needs less (or no) electricity.

But it is important to distinguish between this growing retail competition and retail wheeling [see box]. My argument is that retail wheeling is not a synonym for competition. Retail wheeling is an attempt to impose a commodity model on what is really a service market, namely the retail electricity market. What we should be looking for are measures to promote service-based competition as opposed to commodity-based competition. I think the Northwest Power Planning Council is a mechanism to promote service-based competition by breaking down the barriers to cost-effective energy efficiency. One of the most important dimensions of service-based competition is precisely that kind of effort.

The Council is not a spectator in all of this. The Council is a major decision-maker. The Council and its members and the constituencies to which they speak will, in the end, shape this process, not simply react to it.

**Bob Rowe, commissioner,
Montana Public Service
Commission⁷**

Traditionally, regulators have resisted competition. A new generation (in which I include myself) is actively encouraging competition in a range of industries, from trucking to telephones. My general regulatory approach is to encourage competition where effective markets can be created, and to help ensure those markets adequately account for all costs.

Where markets simply will not achieve society's goals (adequate amounts of electricity for low-income households, phones for rural families and businesses, accounting for various

externalities) mechanisms must be crafted to meet those needs. Playing a role in addressing these concerns is an appropriate regulatory function.

At the wholesale level, competition may be a tool to help achieve the Power Act's objectives. Distribution systems could be required to charge rates which cover the costs of efficiency improvements and external costs society and regulators expect to be addressed.

Contributions to cover stranded investments could be required as a condition of exit. After exit, future service would no longer be available on a requirements basis.⁸ This

stipulation would require an honest discussion up front.

Customers should not be allowed to play one seller off against others indefinitely at the expense of other customers.

Electric distribution companies could be required to obtain efficiencies from all customer classes. Access charges could be set high enough to recover costs from all who use the system. All parties should face the same broad set of costs and responsibilities.

Integrated resource planning may be one of regulation's greatest contributions to society. As developed in the Northwest, the process em-

phasizes flexibility, the ability to plan for an uncertain world. If anything, integrated resource planning should be broadened.

Regionally consistent siting laws could help close the policy loopholes which let independent power producers avoid responsibilities such as consideration of externalities.

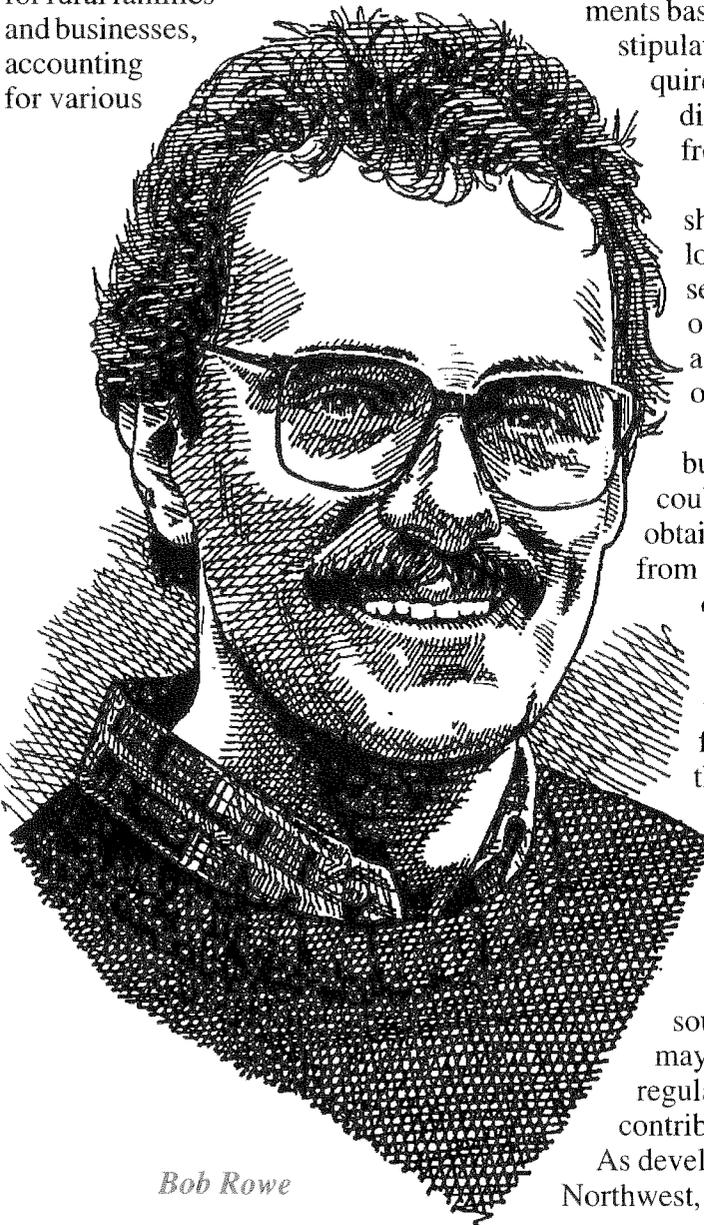
**Al Alexanderson, vice president,
Portland General Electric Company⁹**

I think we are already in the restructuring of the utility industry. Certainly the effects of it are ones that I live with all the time. It's driven by a desire on the part of customers to have choices, and a drive by competitors to reach those customers. I don't think we can "just say no" to that.

We have already lost an industrial customer to a competitor in the last couple of years. There's an election coming up to extend public utility service to our customers in Rainier. Last year we had the proposed Rockwood public utility district. Before that we had the East Portland public utility district proposal. So we're very sensitive to the rates of our core customers, as well as the rates of our industrial customers.

We've already moved in our current rate case to hold the line on our industrial rates, partly because of increased competition, partly because we've known for some time that those rates actually recover a higher share of costs than do some of our other rates.

As customers get more choices, more players will emerge. We have to focus on cost and price. That's what we've been doing for years. This is a survival issue for the company.



Bob Rowe

That states the problem. I don't know the answer.

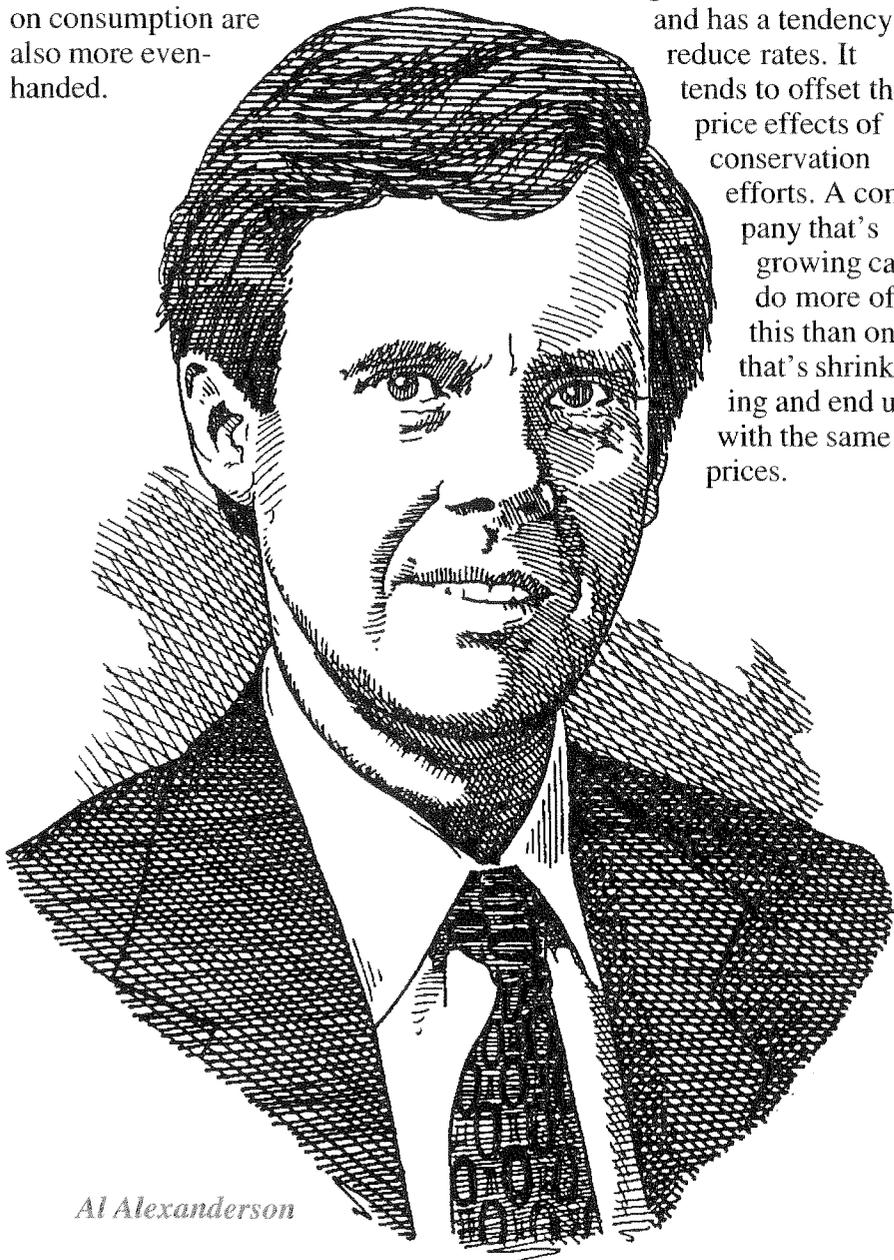
There are some alternative structures that could help achieve the goals of the Northwest Power Act without damaging at least the investor-owned utilities' competitive position.

One is a form of government funding or administration of efficiency programs. Much of what we do in demand-side management and efficiency acts like a tax we collect from some customers and administer to others. It raises their prices. A more even-handed tax would be one on fuels or on emissions. Taxes on consumption are also more even-handed.

Another way of addressing this problem is incorporating social costs in system access charges, somewhat along the lines of the phone company. Our company's cost of new generation is equal to or lower than our competitors' cost. But our average cost, the cost of all the other things, that's not the same. That's where we don't have a level playing field.

Another method or approach that may be a partial solution is to balance our demand-side management programs and our drive to develop renewable resources with marketing. Much

load growth is beneficial and has a tendency to reduce rates. It tends to offset the price effects of conservation efforts. A company that's growing can do more of this than one that's shrinking and end up with the same prices.



Al Alexanderson

Other strategies include, increased reliance on participant charges, charging the people who actually benefit, codes, targeting low-margin sales, and overall better design and lower-cost programs. All of these are things that we can do, are thinking about doing or are doing. 

1-Rich Sonsteli's comments were excerpted from a presentation February 24, 1994, before the Washington Utilities and Transportation Commission.

2-Ken Canon's comments are from an interview conducted March 24, 1994.

3-Stranded investment in this context generally refers to utility investments in expensive conservation efforts for a specific industrial facility, which then opts to leave the utility's service territory.

4-Bruce Bosch's comments were excerpted from a presentation before the Northwest Power Planning Council, February 23, 1994.

5-In the two-tiered rate proposal, wholesale electricity purchased from the Bonneville Power Administration will be sold at a lower rate for a fixed initial amount and at a higher rate for sales beyond that amount.

6-Ralph Cavanagh's comments were excerpted from several sources, including a phone conversation and published documents.

7-Bob Rowe's comments are excerpted from a presentation before the Northwest Power Planning Council, March 9, 1994.

8-Utilities are required by law to provide electrical service to anyone in their service territory who requests service.

9-Al Alexanderson's comments were excerpted from a presentation on February 23, 1994, before the Northwest Power Planning Council.

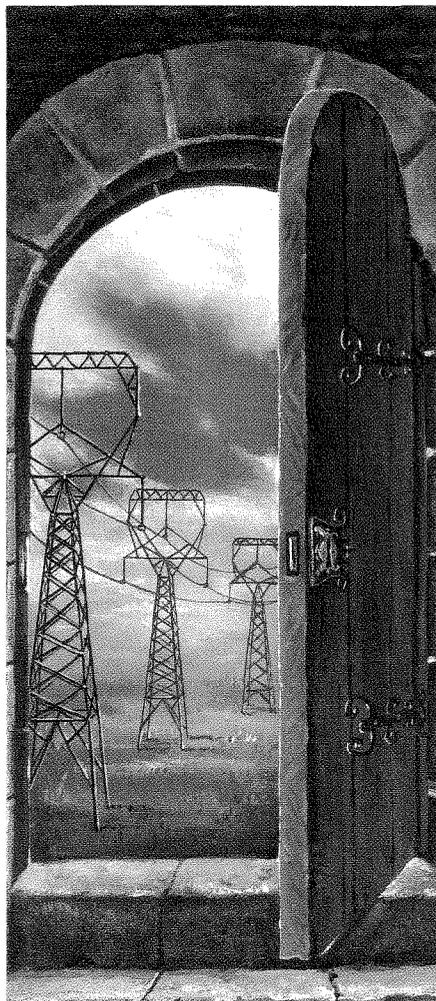
REINVENTING WHEELING



In 1992, Congress passed long-awaited and much debated legislation designed to make the nation's energy systems more efficient, competitive and responsive to the needs of consumers. Among its numerous measures, the National Energy Policy Act of 1992 made it possible for the Federal Energy Regulatory Commission to create new policies that govern wholesale power transmission. These policies address such things as the opening of transmission access to utilities that don't own their own transmission systems.

Perhaps the most controversial element of the 1992 legislation is a policy that could result in non-utility producers of electricity, such as industries that build their own power plants, obtaining access to power lines to sell their excess electricity directly to other users, without going through an existing utility. The 1992 legislation did not authorize this so-called "retail wheeling." It did, however, leave it up to each state's utility regulators to decide whether a state would permit it.

If approved, and only one state is even close, retail wheeling would enable industries to opt out of buying electricity from their local utility to buy cheaper power from another source, such as another industry. The local utility would still be compelled to transmit the electricity along its power grid, however, and that utility's other customers would still have to pay for the power plants built to serve the larger industrial load.



Utilities would be forced to compete to supply low-cost industrial power, while residential and smaller commercial customers would likely be expected to pick up the difference with higher rates. It's also not clear how environmental concerns about power

plant construction and operations could be allayed if small, non-utility projects are developed for retail markets, and state regulators only have authority over larger plants or those constructed by utilities.

Such concerns were the driving force behind the formation of a coalition of some 57 organizations, including consumer groups, independent power producers, labor unions and others. The groups come from 22 states and the District of Columbia. On March 7, 1994, they released a joint declaration on the electric utility industry.

The declaration announced the group's support for "regulatory choices that respond to concerns of systemwide cost minimization, customer choice, customer equity, reliability of service, risk reduction and environmental stewardship." But, "by endorsing the fiction of retail wheeling," the groups' joint declaration proclaims, "regulators would find themselves reallocating literally billions of dollars in costs associated with the existing power systems. At the same time they would be redefining the retail electricity business as a kind of commodity exchange, run on the discredited principle of 'the more you use, the less you pay.' Retail wheeling encourages utilities to ignore making investments that will lower utility costs and environmental impacts over the long run."

--CC

by John Harrison

The Northwest Power Planning Council is trying to expand the region's understanding of the linkage between increasing river flows and salmon survival.

Intuitively, it makes sense that speeding salmon past Columbia and Snake river dams to the ocean will lead to an increase in their survival. That's because the less time juvenile fish spend in reservoirs behind dams, the less they are exposed to disease, predators, slack water and other impacts on survival.

But intuition is not science, and scientists are divided on the benefit of higher flows. Increases in survival may or may not be due to a single factor such as higher flows, some scientists say. Without definitive research, the question will remain open — and controversial.

The Northwest Power Planning Council has been in the middle of this controversy since 1982, when the first Columbia River Basin Fish and Wildlife Program called for higher flows in the spring and early summer to speed the migration of juvenile fish to the ocean. This year the Council is working to help the region acquire better scientific analysis on the issue.

Studies in the late 1970s suggested that higher river flows generally result in higher salmon survival rates because juvenile fish reach the Pacific Ocean faster with higher flows. The Council bases its fish and wildlife program on



Photograph by Stephen Sasser

the best available science, so it relied on that research when it called for higher flows during spring and early summer.

However, more recent studies confirm that the relationship is much more complicated than simply volumes of water and numbers of fish. Other factors enter into the equation, factors such as water temperature, water clarity, size of the fish when they are in the system and predation.

A coordinated approach

This is a critical issue for the Columbia River Basin not only because of the impact on salmon, but because more than 60 percent of the electricity used in the region is generated at dams on the Columbia River and its tributaries. Increasing flows to aid fish generally means a shift in hydropower production. Depending on water conditions in the basin, the region may have to purchase electricity from outside the Northwest to make up for hydropower generation lost in winter.

The relationship between river flow, velocity of the current and salmon survival is one of the key scientific uncertainties that the Council pledged to investigate in its 1994 Columbia River Basin Fish and Wildlife Program. The investigation included three important actions:

First, the Council contracted with Oak Ridge National Laboratories to conduct an independent review of available scientific literature on the topic. That review, completed in March, concluded that the general relationship of increasing survival by increasing flow in the Columbia Basin appears to be reasonable. The reviewer suggested future studies should refine the survival

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estimates, using improved techniques and a wider range of fish stocks and flow conditions.

Second, in February, the Council convened a workshop made up of fishery scientists. These 11 national and regional scientists did not resolve the issue, but they did identify building blocks for future research.

Third, in April, using ideas from the workshop, the Council developed draft hypotheses that could form the basis for future research. One hypothesis accepts that there is a relationship between flow, water velocity, fish travel time and survival from the onset of active downstream migration to adult spawning. The second postulates that, under low water conditions, transportation of juvenile fish in barges downstream past the dams can increase the survival of salmon and steelhead, compared to the survival of similar fish that migrate through the river under similar water conditions.

“At first glance, this may seem inconsequential, but it really is a significant step,” Council Chair R. Ted Bottiger said. “This issue is so divisive that until now the region’s scientists could not agree on how to study the flow/survival issue. With their help, we’ve done that. With the hypotheses as a foundation, this question finally may be studied in a comprehensive, scientific way. We want to get away from the problem of dueling biologists.

“From the workshop, it was clear that while there is no consensus on a specific relationship between river flow, velocity and survival, there is agreement on generalities and on how a hypothesis might be shaped and then refined over time,” said Bottiger.

“Scientists have been researching this question for more than 20 years, but research to date has been uncoordinated. Our intent was to state a hypothesis that could be tested, and then to set up a process to see that this high-priority research is carried out.”

“Sufficient” flows

Ultimately, the flow/survival issue comes down to a question of what constitutes sufficient flows for migrating salmon, said Chip McConnaha, a Council biologist who is directing the flow/survival hypothesis work. The Northwest Power Act of 1980 charged the Council with devising a fish and wildlife program to address losses caused by construction and operation of the Columbia Basin hydroelectric system.

“The Act specifically charged the Council with including in the program flows of sufficient quantity and quality to satisfy biological objectives,” McConnaha said. “Ever since, the Council and the region have struggled valiantly to define what is meant by ‘sufficient.’ I think it is safe to say that the question of what constitutes sufficient flows is probably one of the most divisive fish and wildlife issues the region has faced. Through the workshop, and through the independent scientific review and the hypotheses, we are directing the region to address the question in a constructive way,” he said. 

THE RELATIONSHIP BETWEEN RIVER FLOW, VELOCITY OF THE CURRENT AND SALMON SURVIVAL IS ONE OF THE KEY SCIENTIFIC UNCERTAINTIES THAT THE COUNCIL PLEGGED TO INVESTIGATE IN ITS 1994 COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM.

Clues about salmon survival may reside in the vast Pacific Ocean.

by John Harrison

Deep in the sediment of two bays — one Canadian, the other Alaskan — ancient fish scales may help scientists understand one of nature's great mysteries.

This summer, a fisheries biologist from the University of Washington's School of Fisheries will collect and study core samples from the bottom of Nootka Sound on the West Coast of Vancouver Island for clues that may help unravel the mystery of fish

abundance and scarcity in the Pacific Ocean. This will be in conjunction with Canada's Department of Fisheries and Oceans. Next year, similar research is planned in Skan Bay on the Alaska Peninsula.

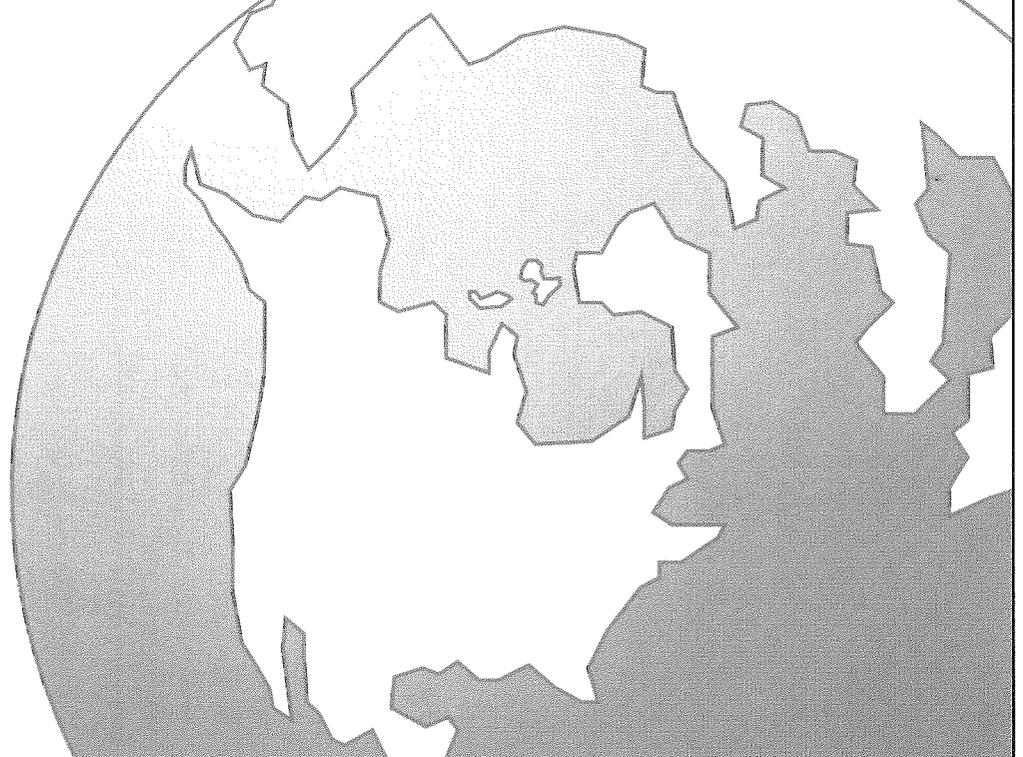
The researcher, Bob Francis, is one of a number of scientists who are trying to gain a better understanding of what happens to fish in the ocean. Because it is difficult to focus research on so vast a place, there are many unknowns. But it

is clear that in the North Pacific Ocean, where salmon from the Columbia River Basin grow to adulthood, survival conditions vary dramatically from one area to another.

Off the coast of Washington and Oregon, for example, conditions currently are poor for survival. In the Gulf of Alaska, however, salmon production appears to be at an all-time high.

Francis hopes to find clues to the mystery in fish scales.

Tackling the UNKNOWN



Throughout their lives, fish can lose their scales from abrasions. Scales accumulate in the sediment at the bottom of the ocean, and their abundance or scarcity leaves a record of environmental conditions, Francis said. By comparing the sediment evidence with historic data about weather conditions, ocean temperature and salmon harvest, a picture may emerge about long-term survival trends. Similar research already has revealed a 60-year cycle of scarcity and abundance of sardines and anchovies off the California Coast.

An enormous laboratory

While little is known about fish survival in the North Pacific, survival in the freshwater environment is much better understood. Impacts are well-known — hydroelectric dams, habitat destruction, water withdrawals in spawning areas, pollution, overfishing.

But that is only part of the salmon survival puzzle. Scientists presume there are impacts in the ocean environment, too, from climate, water temperature, food availability, predation and disease.

“We can’t do anything about ocean conditions, and so we need to do whatever we can to address the human-caused impacts on salmon survival in the Columbia River Basin,” said Council Chairman R. Ted Bottiger of Washington. “Problems in the ocean make it all the more important for us to improve conditions in the freshwater habitat.”

Learning the ocean’s secrets is an imposing task. “This is not laboratory science,” said Steve Hare, who is writing his doctoral dissertation on the subject at the School of Fisheries. “This is historical science. We look at events over time. We’re not conducting experiments.”

In 1977 the temperature of the ocean changed dramatically.

It has to be that way, for the Pacific Ocean is an ecosystem — or perhaps more accurately, multiple ecosystems — of remarkable complexity. Scientists look for “events” — shifts in the atmosphere and ocean climate — and try to discern their impact by studying any available written records. Mostly, those are fishing records.

“Events seldom occur, but when they do they are significant,” Francis said. “Salmon seem to respond very strongly to these signals. The nice thing is that we have a long record of salmon harvest information, stretching back almost to the turn of the century, and, at least in Alaska, this serves as a good proxy for total production — catch plus escapement.”

The bony ridges on fish scales, like tree rings, are close together when growth is slow, farther apart when growth is rapid. Canneries sampled their fish in an attempt to predict future abundance and, therefore, cannery production and sales. Good records of harvest numbers and fish scales are available as far back as 1910 — the blink of an eye in the age of the ocean, but a significant resource for modern fisheries scientists.

Pieces of a giant puzzle

Research at the University of Washington, and other institutions around the country, is beginning

to fill in the pieces of the ocean survival puzzle. Certain trends are evident, but their consequences are not well understood. For example, in 1977 the temperature of the ocean changed dramatically in response to significant shifts in the Northern Hemisphere’s atmosphere.

Scientists describe this as a northward shift in the ocean’s main temperature regimes. Water along the Pacific Coast warmed, and water in the central Pacific cooled. Warm water fish such as mackerel, a predator of young salmon, have been found along the Oregon and Washington coasts far north of their usual California waters. Ocean winds shifted their usual patterns. So did water currents that cross the ocean between the eastern and western Pacific. Concentrations of plankton, which forms the base of the food chain for fish, also shifted their distributions. Accompanying all of this were repeated “El Nino” ocean-warming events, but no reciprocal ocean cooling.

Similar climatic shifts are believed to have occurred in the 1920s and 1930s. The reason is unknown. So far.

“What we know is that regimes of water and air temperature in the North Pacific climate have profound effects on elements of the ocean ecosystems,” Francis said. “When climate regimes change, there are major shifts in fish production.” For example, salmon production in the California current, which flows south along the coasts of that state, Oregon and Washington, has been low since the sea change of 1977, compared to salmon production in Alaska, where it is booming.

Why? Again, scientists don’t know, but research is giving them tantalizing clues.

B iologist William Pearcy of Oregon State University has studied salmon survival in the area within 200 miles of the Oregon Coast. His research suggests that the upwelling of nutrient-rich cold water is slowed significantly by ocean climate shifts such as the one in 1977. As a result, there is less food production near the surface where fish live. That may affect survival, or it may not, and scientists won't jump to conclusions. Individual impacts are difficult to isolate in a place as vast as the ocean.

H owever, "we can no longer afford to view the North Pacific Ocean as an invariant, unlimited and benign pasture for increasing releases of salmon," Pearcy wrote in an article about the subject. Pearcy noted that as upwelling increased, so did survival of coho salmon in the ocean near the Oregon Coast. Conversely, as upwelling decreased, survival decreased, too. That may be the result of poor feeding conditions, but it is likely the result of multiple factors. Availability of food and the strength or weakness of upwelling currents may stimulate juvenile fish to migrate beyond concentrations of predators, or create turbid waters that make young fish harder for predators to find, Pearcy wrote. On the other hand, sea birds, such as the common murre, also eat young salmon in the ocean, further complicating an analysis of ocean conditions.

One thing is certain, however: artificially boosting production of fish may make no difference in the number of fish that return as adults to spawn. Ocean conditions are only part of the reason. Other factors also come into play, such as the density of young fish in the ocean. Density appears to be par-

Increased hatchery production actually can lead to an overall decrease in ocean survival.

ticularly critical for coho salmon off the coast of Washington and Oregon — both hatchery fish and naturally spawning fish. In fact, scientists believe that after a point, increased hatchery production actually can lead to an overall decrease in ocean survival.

Deeper water, deeper mysteries

Meanwhile, farther out in the ocean, the environment is even less understood. There, too, research is continuing.

Biologist Kate Myers of the University of Washington, who specializes in high-seas salmon research, said most of the effort during the last 40 years focused on the impact of the Asian drift-net fisheries, which targeted salmon and squid, but also captured other species, including dolphins and seabirds, as a bycatch.

"But the United Nations resolutions led to the termination of all high-seas fishing with large-scale driftnets, and now we can focus more research effort on ocean production of salmon," she said.

High-seas research is expensive, and there isn't a university-owned or government-owned research vessel available in the United States to support this work. In fact, University of

Washington scientists, and their counterparts from other American universities, typically pay to hitch rides on research vessels from other nations, particularly Japan and Russia.

T he effort is paying off. Researchers have discovered coho salmon from Oregon and Washington in international waters, much farther west than they ever were believed to travel. Researchers also are obtaining new data on ocean age and growth, feeding habits, body condition, parasites, disease and predators as well as other factors that may have a significant impact on salmon survival in off-shore waters.

Myers predicts that research will continue, but that funding will be a major constraint. That's because there are record numbers of salmon in Alaska, and so research into declining salmon runs elsewhere may be hard to secure.

But therein lies a warning, Francis said. Fish managers must not be lulled by booming production there. The current climate regime, which started in 1977, is very favorable for salmon production in Alaskan waters. But this likely will not be the case in the next climate regime, whenever that occurs, he said.

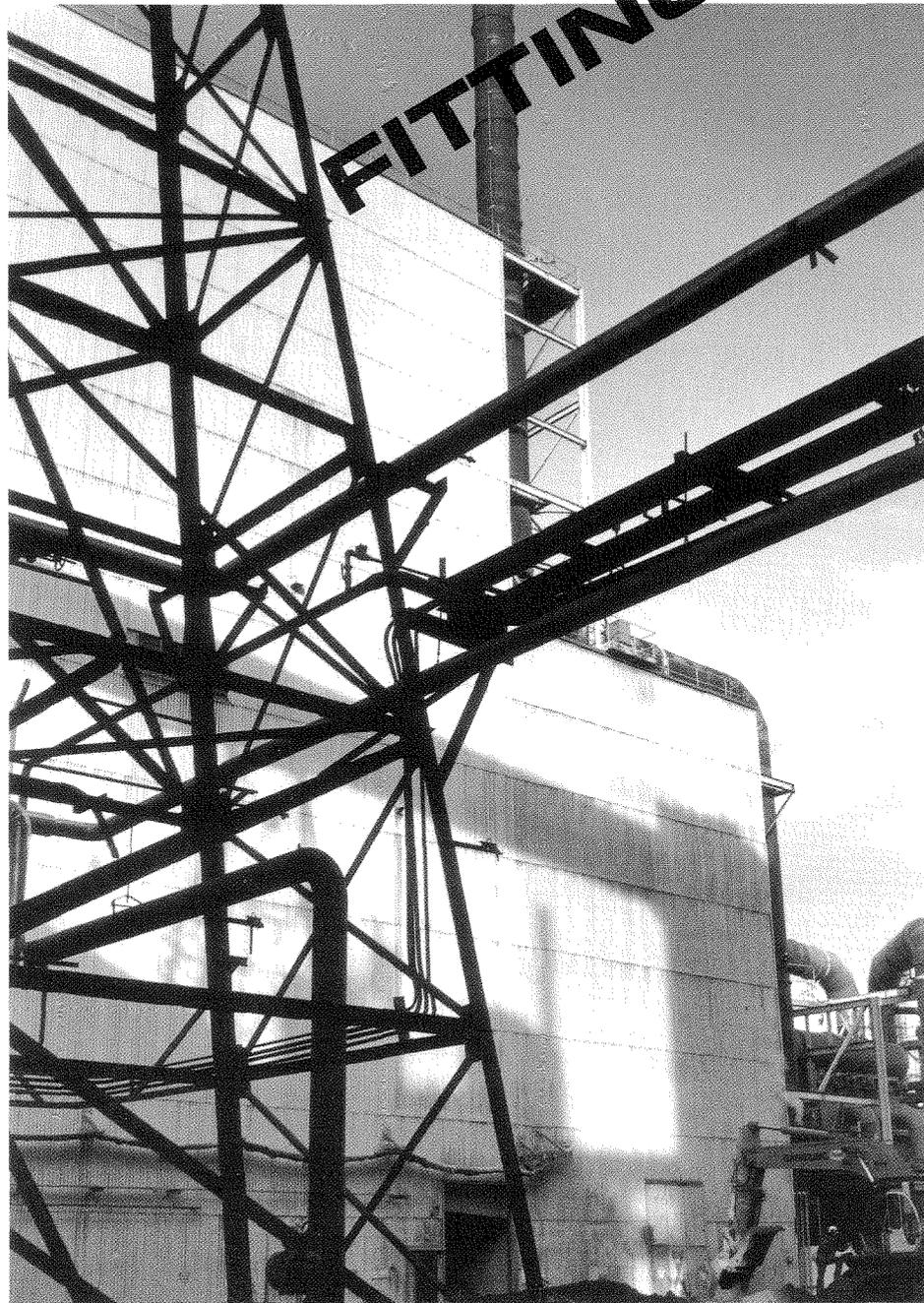
His advice for fish managers: Factor ocean conditions into production decisions.

"Management needs to take into account the dramatic changes in the ocean environment because we cannot control them," Francis said. "Management can control harvest, hatchery production and freshwater habitat conditions. But when you evaluate the impact of a decision to change any of these, you must be aware of how ocean conditions also might have an impact."



FITTING INTO THE FUTURE

by Carlotta Collette



In its 1991 Northwest Power Plan, the Northwest Power Planning Council listed biomass-fueled cogeneration among its preferred resources for future electricity production. Biomass, usually wood residues, can be burned to generate both electricity and heat for manufacturing processes. The Scott Paper Company/Snohomish Public Utility District project described in this story, is a particularly fine example of such a project.

Scott Paper Company's new power plant will be built in the shadow of the 1950s boiler.

Photographs by Carlotta Collette

The old Scott Paper Company on Port Gardner Bay at the mouth of the Snohomish River was built entirely of bricks in 1929. At the time, it was a modern facility, "form following function," classic American industrial architecture. One long, tall, thin structure, like a stack of train cars, housed the digesters that turned wood chips into wood pulp. Next to that went a bulky block of a building, low and square, where giant line shafts turned the belts that powered the pulp-drying machines.

Behind that were five boilers, also housed in brick. They burned chipped scrap wood, known as "hog fuel," to generate the steam that fired up the digesters, turned the massive drive shafts in the mill and served the other heat and mechanical needs at the plant.

For at least its first quarter-century, this compact pulp mill just north of Seattle was remarkably self-sufficient. It produced most of its own drive power using scrap wood byproducts cast off from its milling operations. But like industries everywhere, the Scott Paper Company in Everett, Washington, has had to adapt to survive.

In the 1950s, a new boiler was added, a sleek, nine-story tower that burned waste liquor from the digesting process, recovering both energy and sulfur for reuse. This greatly increased the quantity of steam the plant could produce. Pollution controls, scrubbers, new fossil-fuel boilers and even an electric boiler were added as the plant expanded to the north.

By the 1990s, the plant was still powering about 40 percent of its operations with steam from its antiquated wood burners and newer recovery boiler. The rest of the mill's machinery and process-

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ing were being driven electrically, requiring between 33 and 38 megawatts at any given time.

The electricity came from the Snohomish Public Utility District at "great rates," says Alex Hood, manager of Scott's latest effort at self-sufficiency. "But our old boilers had to be shut down," Hood explains, "and we would have had to replace them with something fossil-fueled and have to haul away our sludge and wood waste, or add other wood-waste boilers. We began to look around at our options."

Scott approached the Snohomish Public Utility in 1990 with the idea that the private industry and the public utility cooperate to build a wood burning cogeneration plant that could produce steam for use by the mill and also be used to generate electricity for the utility. After some negotiations and an open competition with other entities proposing to build the plant, Scott and the utility came to an agreement.

Scott would provide the site, manage the construction, pay for most of the wood-waste fuel, and operate and maintain the plant. The utility would pay for and own the power plant and take the electricity generated, which is expected to be enough for 21,000 homes. Scott would get the steam not required for power generation and be responsible for fulfilling environmental requirements. The entire project is budgeted at about \$115 million.

In an interesting twist, the Sacramento Municipal Utility District in California is buying the power from Snohomish until the year 2007. The California power sale is frosting on an already pretty sweet cake for both the paper company and the local utility.

"Snohomish brought its ability to secure low-cost financing. Scott brought its site and experience in the industry. And

Sacramento's purchase eliminated initial rate impacts the construction might have caused for our customers," says Coe Hutchison, assistant general manager for the Snohomish utility. "This is the kind of project we like. It's pretty customized, but everybody wins. The community benefits because we're retiring old, inefficient boilers and replacing them with a new energy-efficient power source that will cut carbon dioxide emissions by 5,000 tons a year."

Without the teamwork on this project, the economics would have been prohibitive. "It would not have been cost-effective without the fuel and maintenance support from Scott," notes Hutchison. Scott's Hood agrees. "We would much rather put our capital into product development than into a new boiler.

This way, we get rid of our old boilers and still have a source of steam on site. Plus, it's environmentally cleaner than the old boilers."

Hood is also optimistic about finding the 800,000 tons of wood waste the plant will require each year. "That's about three times as much as our old boilers could take," says Hood, "But new regulations that stop open-air burning of woody debris will help. You never feel you have an absolute supply of wood. Saw mill residuals will probably go down, for example. But the boiler's wood sorter can handle a lot of different kinds of wood products, even if gravel and other debris are mixed in. It can even handle up to 8-inch stones, so it eliminates a lot of hand sorting," he adds.

More stringent air-quality regulations in British Columbia also prohibit open air and so-called "teepee" burners for wood residue, so the Scott Company plans to add barge loading and unloading facilities to accommodate the expected influx of wood from that province.

The power plant's boiler, which is manufactured by Gotaverken, a U.S. affiliate of a Swedish firm, can burn natural gas or fuel oil as well as wood waste. The steam turbine generator is manufactured by General Electric.

The brand new power plant, with its boiler, generator, cooling tower and substation, will be "shoehorned into our site," Hood points out. Since the Scott Company is on the waterfront with the town stepping up the hill to the east, there was little excess land to spare for a new power plant. Instead, a small space was cleared in the U-shaped opening between the 1929 brick buildings and the 1950's boiler.

Construction began in 1993 and is expected to be completed in 1995. 



Site clearing and construction have begun on new biomass-burning power plant.

Letters

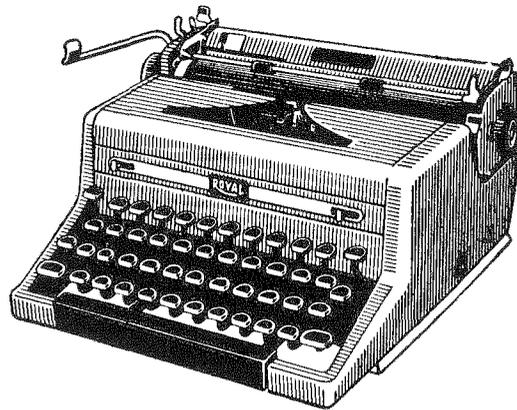
TO THE COUNCIL

Energy News encourages letters on subjects discussed in this magazine. Letters reflect the opinions of their authors only. They do not reflect Council policy. Please keep letters under 200 words, refer only to topics covered in Energy News and address them to LETTERS, when you send them to our office.

Dear Energy News:

Before you further extol the "might be" in your "Power In My BackYard," [November/December 1993 issue], your technical claims should be examined by power engineers.

You show no argument that power transmission and concomitant central power plants can be eliminated or reduced with "PIMBY." Setting "PIMBY" Fuel-Cells, explosive gas-line tentacles and yesterday's announced 9-10 percent hike in natural gas prices aside for a moment, consider a PIMBY candidate like *Solar Photovoltaics*. Is a Portland Consumer more prudent purchasing five kilowatts of photovoltaic capacity (about 50 square meters of photovoltaic panels) for the rooftop of his home at an insolation of 1,382 kilowatt-hours per square meter, or pooling his demand or capacity



"Before you further extol the 'might be' in your 'Power In My BackYard,' your technical claims should be examined by power engineers."

needs with others in some utility's central station Solar Voltaic Generation Plant near Redmond, Oregon, at 1,838 kilowatt-hours per square meter? That is 33 percent more electricity for his investment.

Obviously, that Portland photovoltaic needs to participate in some storage system, such as the pondage and nonfirm energy of the BPA system and is better off with his piece of solar photovoltaics at some higher

gross annual capacity factor solar-fuel site — East of the Cascades and near a hydroelectric dam.

Finally, on fuel cells, surely there is some pollution in feeding a hydrocarbon gas into a phosphoric acid fuel cell, even if in PIMBYizing a city or town you plan to flush it into the sewer system or septic tanks.

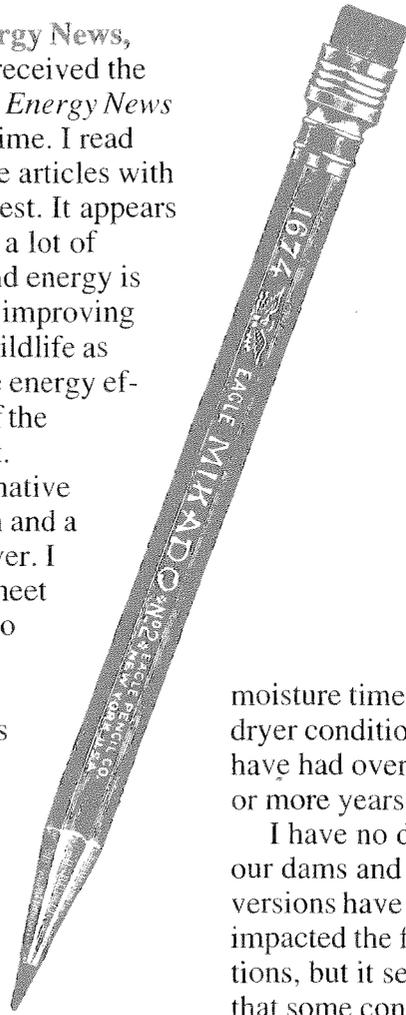
In his talk at *Sunworks '93*, Council Member Duncan said, "The Council's authority depends largely on the quality of its underlying analysis, on the persuasiveness of its policies, and on the credibility of its processes." The PIMBY article hardly hues to the standards Duncan tells for the Northwest Power Planning Council. Yours For Strategic Solar Energy Decency, Alfred Canada Grants Pass, Oregon

Dear Energy News,

I have received the *Northwest Energy News* for some time. I read most of the articles with great interest. It appears to me that a lot of thought and energy is going into improving both the wildlife as well as the energy efficiency of the Northwest.

I am a native Oregonian and a history lover. I read and meet people who relate to a time 70 to 150+ years ago that was much wetter in the Northwest. They tell of streams and lakes in areas that I have explored and find none today. As an avid fisherman I know the impact of drought on the fish populations. It happens rather rapidly. It also improves rapidly when stream flows and reservoirs are filled for a few years.

Long-term weather or moisture changes have major impacts on stream flow and thus on salmon runs. This raises a question: Why are we referencing fish populations based on high



moisture times and not dryer conditions as we have had over the last 50 or more years?

I have no doubt that our dams and water diversions have also impacted the fish populations, but it seems to me that some consideration should be given to the evidence that salmon runs have been greatly impacted in earlier times.

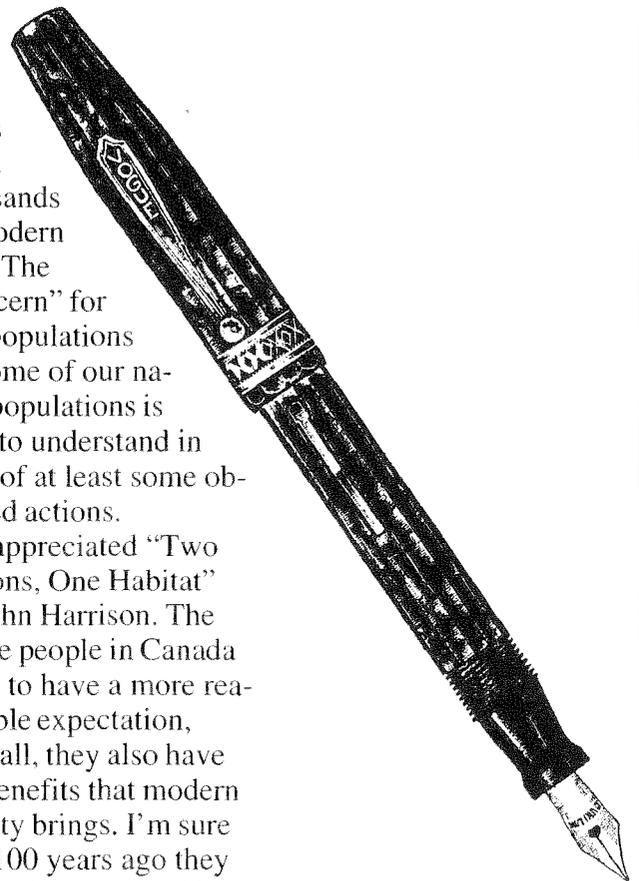
I also wonder why our native Americans demand the right to the meager salmon runs in the Columbia River and other areas. The native Americans seem to use the argument that it is based on the right to maintain tradition and religion, etc., yet I do not see many Indians out on the Columbia with dugout canoes and bark nets, etc., etc. I see modern power boats and

“The ‘concern’ for fish populations by some of our native populations is hard to understand in light of at least some observed actions.”

hundreds if not thousands of modern nets. The “concern” for fish populations by some of our native populations is hard to understand in light of at least some observed actions.

I appreciated “Two Nations, One Habitat” by John Harrison. The native people in Canada seem to have a more reasonable expectation, after all, they also have the benefits that modern society brings. I’m sure that 100 years ago they did not have many, if any, 60-year-old chiefs as they do now.

Sincerely,
Curtis J. Drahn
Bend, Oregon



Dear Energy News,

In a fine example of turning swords into plowshares, in this era of military downsizing and unemployment, a recent CNN report featured a pair of sonar engineers who recently lost their jobs at the Electric Boat Company submarine factory in Connecticut. These two entrepreneurs have developed a sonar device that appears to be able to herd schools of fish into canals, fish ladders, elevators, holding pens and similar devices. Has your organization done any research into the potential of this device for the restoration of salmon runs without the necessity of destroying dams?

Thank You,

Bret J. Whipple
Opportunity,
Washington

Response:

The Council has asked the U.S. Army Corps of Engineers to study the use of low-frequency sound in aiding salmon migration. This research is expected to begin in 1995.

Dear Energy News,

As a subscriber to the *Northwest Energy News* for years, I would like to comment on page 27 (Letters to the Council) in the January/February 1994 Volume 13, No. 1, the letter written and signed by Maxine Keesling, Woodland, Wash. "Fish are not vanishing because of dams and agriculture and forestry, as proved by abundant fish populations that previously coexisted with those circumstances. The circumstances that have changed are preservation of predators, ocean driftnet fishing and increased self-regulated fish netting across streams by

Indians after the Boldt decision."

I could not agree with you more, but I would add to your opinion that all netting including the non-native commercials should be included, there should be no netting period.

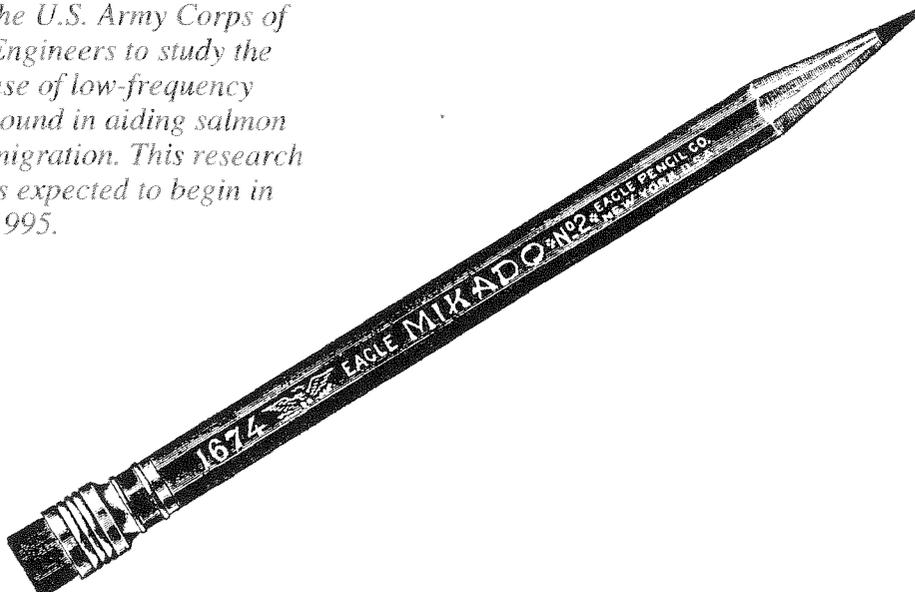
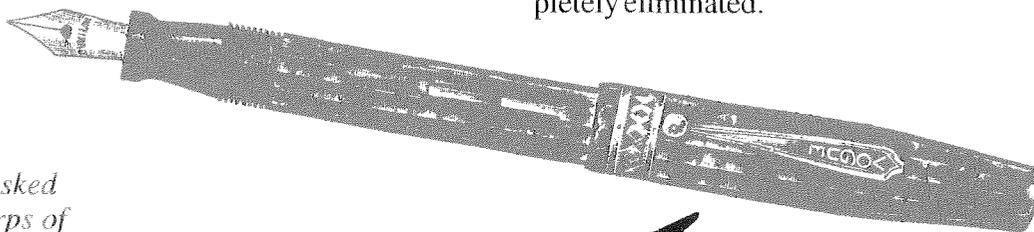
As a solution to the problem, I propose the following:

1. By allotment, have the tribal people come to Bonneville Dam and under supervision give them their 50 percent allowed by the Boldt decision.

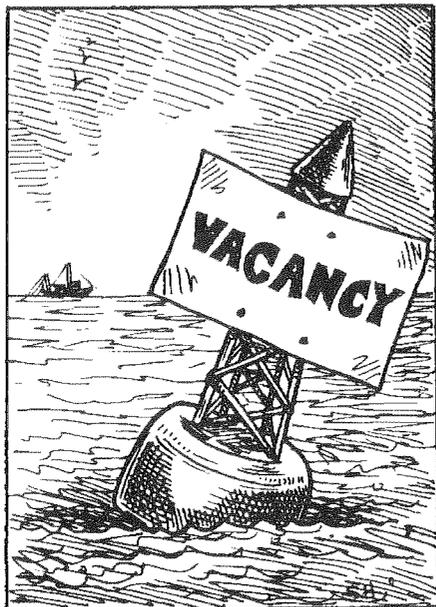
2. Over a four-year period decrease the number of commercial, native and non-native catch numbers and net numbers by 25 percent each year until completely eliminated.

Until this is achieved by realistic people we will never again increase the anadromous fish runs in the Columbia River system.

Bob Kivett
Spokane, Washington



The Northwest



Like salmon, other commercial species are declining. A new study by the Washington Department of Fisheries and Wildlife says most species of fish that are caught commercially in Washington waters are declining in numbers. The report primarily blames overfishing for the decline in herring, hake, Pacific cod, pollock and several other fish species, but says habitat destruction also played a role. The Department will develop a plan for dealing with the depressed stocks. [Source: Seattle Post-Intelligencer, March 18, 1994.]

Bonneville exceeds conservation target in 1993. The Bonneville Power Administration conserved 58 megawatts of energy in 1993, more than twice the amount it saved in 1992. Bonneville's target for 1993 was 39 average megawatts. Most of the savings came through programs administered by Bonneville utility customers, but 14 megawatts came from Bonneville funding of building codes that increased the energy efficiency of new homes and businesses. [Source: Bonneville Power Administration news release.]

Study notes Idaho lake's pollution.

A study by the U.S. Geological Survey (USGS) concludes that Lake Coeur d'Alene in northern Idaho, source of the Spokane River, a Columbia tributary, is one of the most polluted lakes in the world. The USGS study estimates that 85 percent of the lake's 50-square-mile bed is contaminated with 75 million metric tons of toxic sediments containing silver, copper, lead, zinc, cadmium, mercury and arsenic. The contamination resulted from mining operations and entered the lake through the South Fork Coeur d'Alene River. [Source: High Country News, February 7, 1994.]

Washington adopts state energy strategy. Washington Governor Mike Lowry signed an executive order in January officially establishing the Washington Energy Strategy as the policy framework for energy decisions made by state agencies. The strategy includes recommendations for increasing energy efficiency, improving environmental quality and ensuring cost-effective energy supplies. [Source: Washington State Energy Office news release, January 13, 1994.]

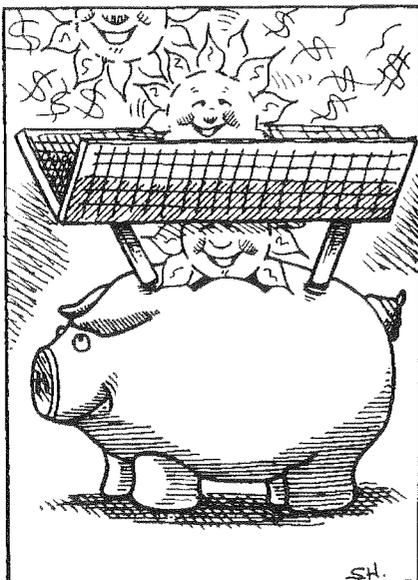
Oregon sues irrigation district over fish kill. The state of Oregon is suing the West Extension Irrigation District of Pendleton for \$5.5 million — \$125 for each of the 44,350 hatchery-raised salmon smolts that were sucked into an irrigation pump station adjacent to the Umatilla River in May 1992. The lawsuit was filed by the Oregon Fish and Wildlife Commission and names operations manager Jerry Franke as defendant. Franke was acquitted of criminal charges in-



volving the fish kill last spring. At the time, Franke admitted screens that could have protected the fish were not working, but he denied tampering with the screens. [Source: The Oregonian, February 10, 1994.]

The Nation

Energy Department touts weatherization savings. The U.S. Department of Energy says its weatherization assistance program has saved about 20 percent of the fuel used for space heating in retrofitted single-family and multifamily dwellings. In a 1989 evaluation of the program, the department estimated that weatherization programs cut energy use by about 18.2 percent for space heating and 13.5 percent overall in retrofitted homes. The 1989 audit was the first since 1984, and more recent savings were not reported. [Source: Energy Conservation Digest, January 1994.]



SHORTS

Solar panels achieve record efficiency. United Solar Systems, Inc., a manufacturer of solar panels, claims to have produced a solar panel that can supply all of the electricity an average home uses during daytime hours at a cost of about 16 cents per kilowatt-hour. That's about four times the average cost of electricity in the Pacific Northwest, but it is also about 10 cents cheaper than the cost of solar electricity from existing

photovoltaic technology. The Troy, Michigan-based manufacturer said its new panels achieve a record 10.2-percent efficiency in converting sunlight into electricity, about twice the efficiency of standard solar panels. [Source: Associated Press story in *The Columbian*, Vancouver, Washington, January 26, 1994.]

CALENDAR

June 6-7 — Demand-side management conference, "On Target DSM: Concepts, Players, Practice," Hyatt Regency Crown Center, Kansas City, Missouri. This two-day seminar explains where demand-side management came from and where it's headed. Topics include the history and culture of demand-side management and planning, implementing and evaluating demand-side management programs. Contact the Association of Demand-Side Management Professionals, 7040 W. Palmetto Park Road, Boca Raton, Florida, 33433.

June 7-9 — Northwest Power Planning Council, Sheraton Hotel, Spokane, Washington.

June 7-9 — "Restoring or Rehabilitating Damaged Ecosystems Workshop," Spokane, Washington. Contact Washington State University, Department of Natural Resource Sciences, Johnson Hall, Pullman, Washington, 99164-6410, 509-335-2963; FAX: 509-335-7862.

June 12-15 — Edison Electric Institute Annual Convention and Exposition, Seattle. Contact Edison Electric Institute, 1111 19th Street Northwest, Washington, D.C., 20036, 202-508-5000; FAX: 202-508-5360.

June 21-22 — Retail wheeling conference, Hyatt Regency Hotel, Beaver Creek, Colorado. This conference will explore the controversy surrounding retail wheeling and address strategic issues including financial impact on utilities. Contact Electric Utility Consultants, Inc., P.O. Box 4474, Englewood, Colorado, 80155-4474.

June 23-24 — Strategic Utility Planning Conference, Hyatt Regency Hotel, Beaver Creek, Colorado. This conference will address the role of regulation, integrated resource planning, transmission access and pricing, opportunities on the "information superhighway," and other related topics. Contact Electric Utility

Consultants, Inc., P.O. Box 4474, Englewood, Colorado, 80155-4474.

June 25-30 — "Solar 94 Conference: Golden Opportunities for Solar Prosperity," San Jose, California, the 23rd American Solar Energy Institute Annual Conference and the 19th National Passive Solar Conference. Contact the American Solar Energy Society, 2400 Central Avenue, G-1, Boulder, Colorado, 80301, 303-443-3130; FAX: 303-443-3212.

July 5-7 — Northwest Power Planning Council, Whitefish, Montana.

August 21-25 — 124th annual meeting of the American Fisheries Society, Halifax, Nova Scotia. Theme of the meeting is "Managing Now for the 21st Century: Food, Recreation and Diversity." Contact the American Fisheries Society, 301-897-8616.

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



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- 94-2 1994 Columbia River Basin Fish and Wildlife Program
- 94-3 Direct Use of Natural Gas: Analysis and Policy Options
- 94-4 Restructuring of the Electric Utility Industry: Implications for the Northwest Power Act
- 94-5 Independent Resource Acquisition: Implications and Options for the Region
- 94-6 1994 Columbia River Basin Fish and Wildlife Program Response to Comments
- 94-7 Scoping the New Power Plan: Issues and Opportunities
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- 94-9 Final Report on Effect of Water Velocity on the Survival of Juvenile Salmon and Steelhead on the Columbia River Basin
- 94-10 Proposed Wildlife Mitigation Projects
- 94-11 Discussion Paper on: Mainstem Passage Hypotheses

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