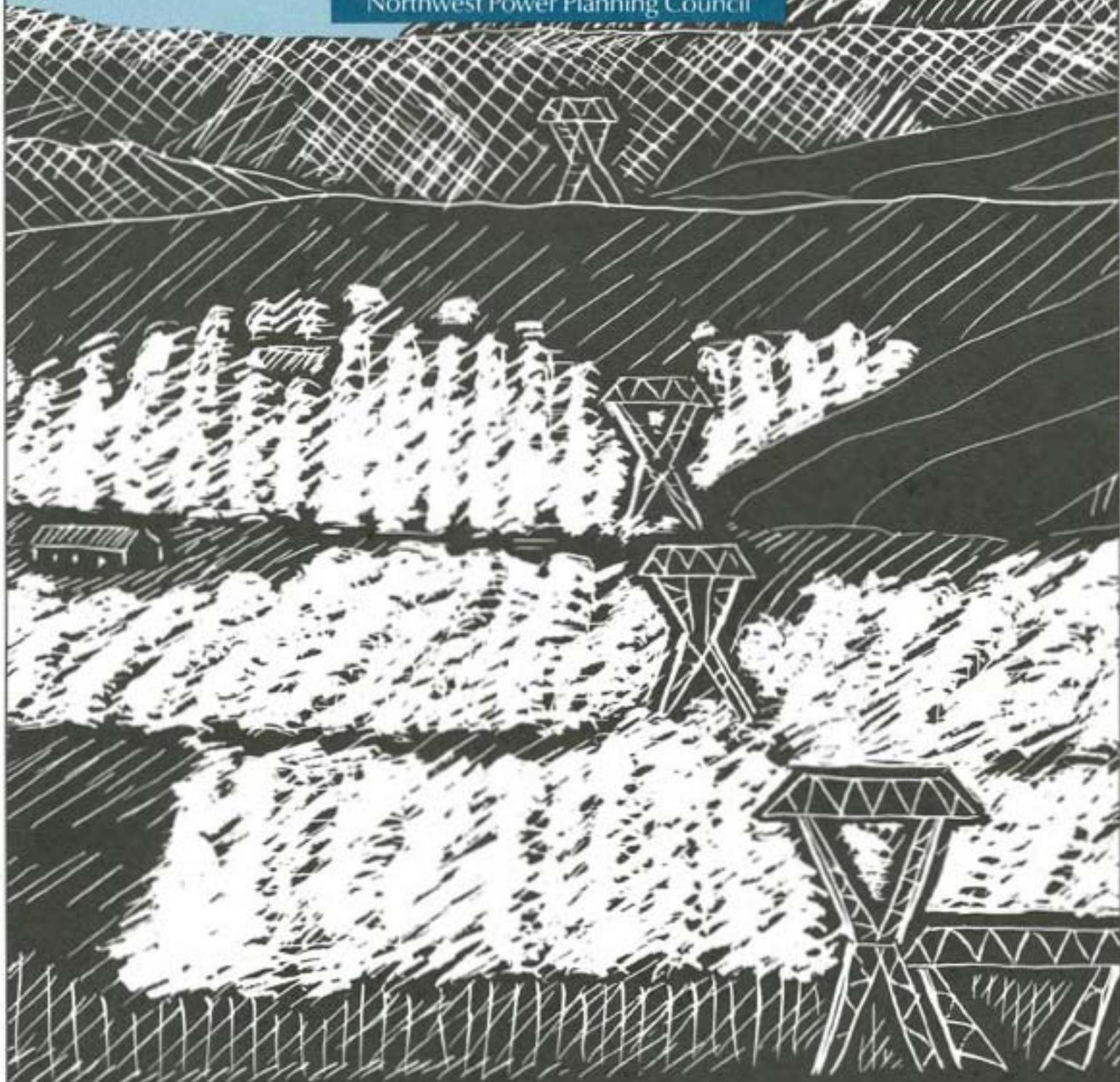


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Conservation in the Draft Power Plan

3 A Question of Emphasis

More than 90 percent of draft plan budget to go for energy savings.

6 Point of View: Jim Goller

Power Planning Council chairman came home to the Northwest through Washington D.C.

11 Squaring Off on the System Plan

No consensus emerging from salmon planning effort.

17 Saving the Salmon: Converging Efforts

Who's doing what, why and when.

20 Bright Lights Big Savings

Seattle's Lighting Design Lab brings new efficiency to businesses.

24 Sheraton's Shining Example

They're increasing the light while decreasing costs.

26 Tapping Commercial Conservation

Utilities promoting and Bonneville paying for business efficiency.

28 Big Sky Least Cost

Montana collaborative coaxes utility toward least-cost resources.

30 Least-Cost Concept Catching On

Utility resource lists move closer to Council's.

32 Shorts

34 Calendar



Happy 10th Birthday Council!

Three governors were there, and a fourth sent a letter to be read into the record. It was April 28, 1981, the first meeting and, according to the records, the first official day of a new regional group called the Northwest Power Planning Council.

Governor John Spellman of Washington summed up the mood of that day 10 years ago, when he called the challenge before the Council a great opportunity. The words he spoke then still stand as one of the best and certainly the most concise description of the Council's work.

"It will be the Council's task," he said, "to assess what we have, to forecast what we need, to plan alternative sources and not reject out-of-hand any possible solution."

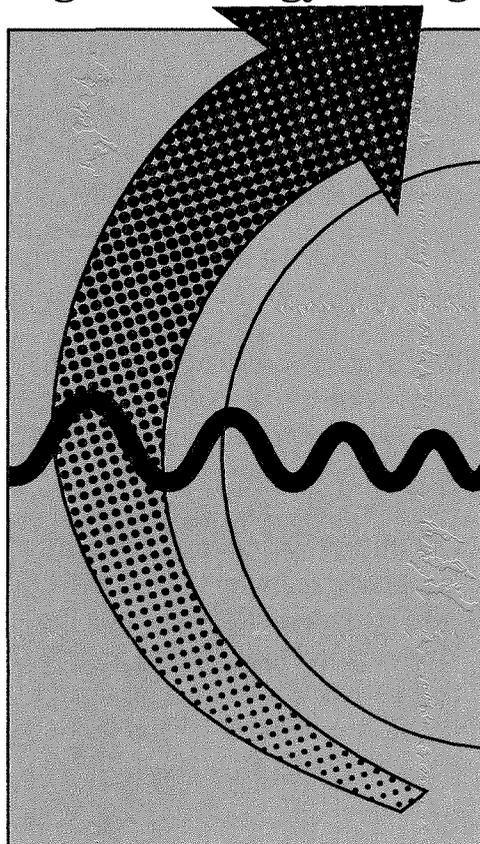
A QUESTION OF EMPHASIS

by Carlotta Collette

More than 90 percent of draft plan budget to go for energy savings.

For the first time in its 10-year history, the Northwest Power Planning Council has prepared a draft regional power plan that calls for new electrical resources. The first increment of that electricity, more than enough to power a city the size of Seattle, will come from sources the Council deemed least costly, both in terms of capital and labor, and in terms of the effects these resources may have on the region's environment. Furthermore, when the Council looked at the relative risks of developing one kind of "power plant" over another, for example, the risk of committing to too large or too small a resource program, the same list of resources surfaced, and conservation was at the top.

But a good deal of the public comment and even the media coverage on the plan have focused on generating resources,



appearing to overlook the emphasis the plan places on saving electricity.

Objective 1: Acquire all low-cost resources

Under the plan's first objective, the Northwest would secure three times more conservation in the next 10 years than the region was able to acquire over the past 10. That amounts to about 1,350 average megawatts of energy savings, and that level of acquisition is no minor task.

All Northwest utilities will be asked to participate. Every Northwest residence, irrigated farm, business and industry will need to be scrutinized to make them as efficient as is cost-effectively possible. Power plants and transmission systems will need to be tuned-up, too.

More than 90 percent of the plan's anticipated expenditures will go toward acquiring these energy savings. And if there are

more savings out there at about the same cost—up to 10 cents per kilowatt-hour—the Council wants them purchased as well.

These resources, along with another 450 megawatts of low-cost hydropower and cogeneration (electricity generated with heat used in industrial processes), are the least expensive and most environmentally responsible power supplies the region could turn to. Conservation is a particularly good resource because it can be acquired in small increments that track the region's expansion. As new homes and businesses are built, they can be made super efficient.

Meeting this objective could cost more than \$6 billion, but that's still only about half the expense of building and operating new generating plants to supply the same amount of electricity.

Objective 2: Reduce resource lead times

To some degree, all utility planners have to be fortune tellers. They must be able to predict how much electricity their customers will need years before that need is realized. It can take as long as a decade to bring a power plant from concept to delivered electricity. By the time the plant is completed, the need for power may have evaporated.

To overcome this problem, the Council, in earlier power plans, designed a two-step process called "resource optioning." Developers could begin the less expensive, but more time-consuming siting, design and licensing processes early, then hold the plant for a decision to begin construction closer to the time when

The Council intends to play an active role in seeing that this plan is carried out.

the need is expected to materialize. This is the strategy of the Council's second objective.

The second objective calls for actions to reduce lead times for about 500 megawatts of cogeneration, 200 additional megawatts of hydropower and resources, such as natural gas-fired combustion turbines, which can be used to back up the hydropower system.

Objective 3: Determine cost and availability of resources

The third objective refers to those resources the Council identified as "promising," although they are not ready for development at this time. Some newer conservation technologies fall into this category, along with solar, wind, biomass and geothermal.

Other resources may be technically viable, but still plagued with questions. These include the Washington Public Power Supply System Nuclear Projects 1 and 3 (WNP-1 and WNP-3) and modern coal plants.

For the first set of resources, the Council is calling for research and demonstration projects to test their applicability to the Northwest's power needs. Resources in the second group pose special problems, both technical and political. While the Council is calling for some actions related to coal and nuclear projects, it is not calling for construction of any plants.

The nuclear projects have long been the focus of regional debate. Some of the issues surrounding the plants, such as how to finance their completion and resolve their legal status, have been largely settled. However, there are still ample uncertainties regarding their viability as future generating resources. The Council is calling for activities to determine whether remaining barriers to their construction and operation can be overcome. If not, the draft plan calls for termination of the projects.

Coal plants evoke some of the same societal reactions that nuclear plants elicit. There are financial, environmental and public acceptance impediments that contribute to utilities' reluctance to build new, large coal plants. Nonetheless, such facilities could be needed if the Northwest continues to grow and "promising" resources don't pan out. To discover whether anyone will take responsibility for developing new coal plants, the Council is asking that three possible future coal plants be sited and licensed.

Objective 4: Actions supporting implementation

There is no question that the actions called for in the draft power plan will require new state and regional policies that foster their implementation. For example, because utilities currently gain profit from selling more electricity, it is, in some ways, a disadvantage for them to help their customers save energy. Regulatory policies could be redesigned so utilities can profit from conservation programs.

Similarly, regulatory policies do not currently support utility investments in research and demonstration projects or in resource strategies that would reduce construction lead times. The draft plan urges changes in these policies to encourage more progressive utility behavior.

The most important point the Council's draft power plan makes is that this is the time to take action.

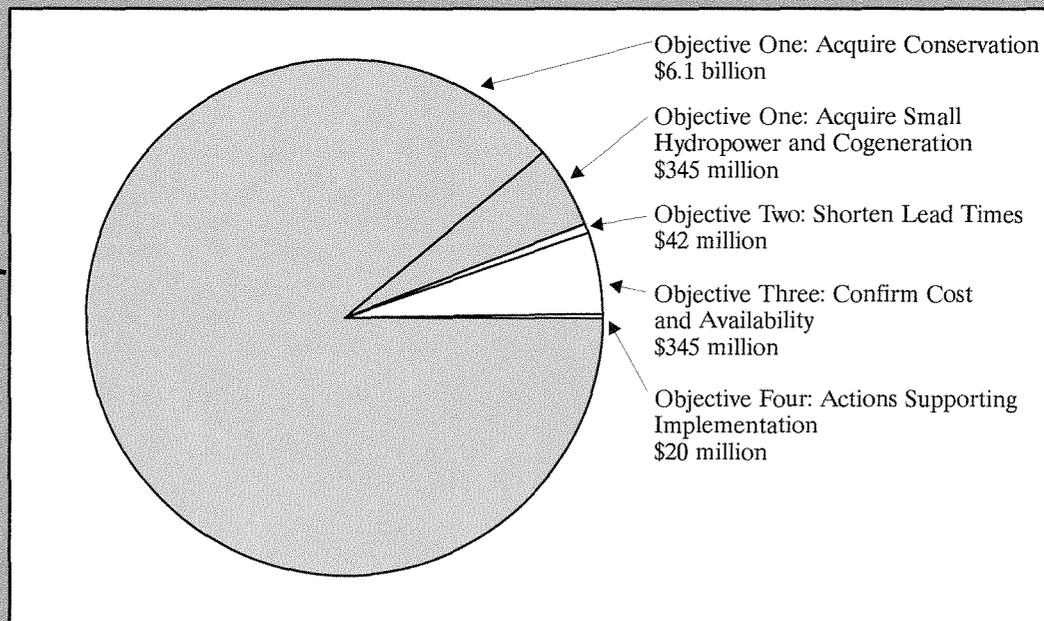
The fourth objective also calls for cooperative conservation activities and research among West Coast utilities. The Council intends to play an active role in seeing that this plan is carried out.

The bottom line

Swiss playwright Max Frisch in his play, "The Firebugs," refers to people who "dread action more than disaster." The most important point the Council's draft power plan makes is that this is the time to take action. In all the Council's analysis, after running hundreds of possible futures through the computer models, one finding stood out: inaction now would be the most costly choice the region could make.

There is no longer a power surplus in the Pacific Northwest. There are numerous new demands being made on the region's hydropower resources. And all new resources have price tags of one sort or another. The actions in this draft plan are simply the best buy available right now.

Draft 1991 Power Plan Expenditures



Point of View

with Dulcy Mahar

Power Planning Council chairman came home to the Northwest through Washington, D.C.

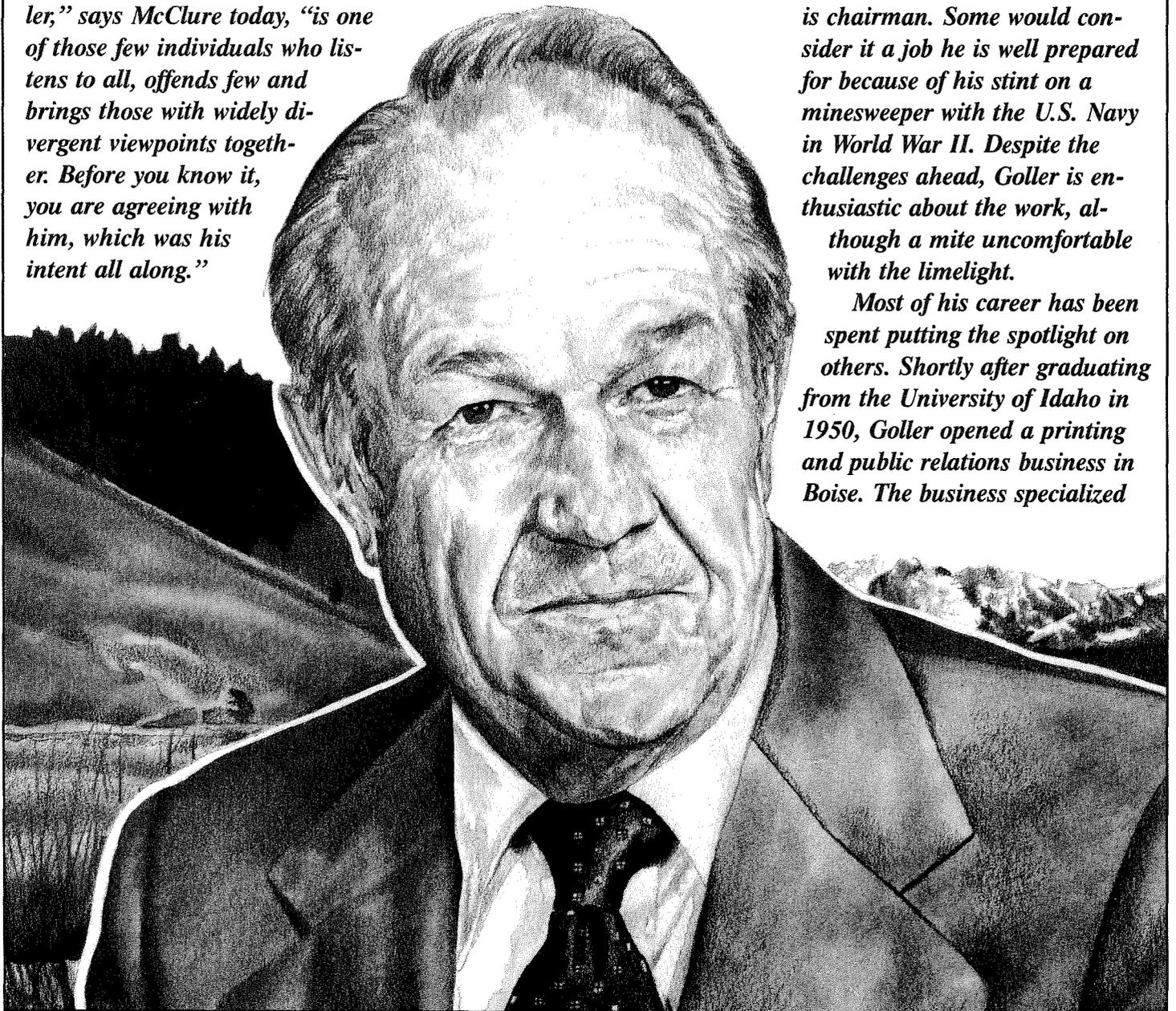
Former U.S. Senator Jim McClure has fond memories of the man who ran his first congressional campaign and rose to be his chief of staff. "Jim Goller," says McClure today, "is one of those few individuals who listens to all, offends few and brings those with widely divergent viewpoints together. Before you know it, you are agreeing with him, which was his intent all along."

Four years ago, Goller found just the place to put those skills to use. That's when he got a call from Idaho Governor Cecil Andrus asking him to serve as one

of the state's representatives to the Northwest Power Planning Council.

Today, after two years as the Council's vice chairman, Goller is chairman. Some would consider it a job he is well prepared for because of his stint on a minesweeper with the U.S. Navy in World War II. Despite the challenges ahead, Goller is enthusiastic about the work, although a mite uncomfortable with the limelight.

Most of his career has been spent putting the spotlight on others. Shortly after graduating from the University of Idaho in 1950, Goller opened a printing and public relations business in Boise. The business specialized



Portrait by Lynn Carson

in publishing services connected with the Idaho Supreme Court and Idaho Legislature.

The contact with the legislature gave him the opportunity to renew an acquaintance with McClure, whom he'd first met at the university, and who had since become a state legislator.

Goller and his firm had handled a few political campaigns for state offices. As McClure ruminated on the possibility of a bid for Congress in 1966, he sought out Goller and asked him if he'd consider running the campaign.

The campaign was successful and so was the association with McClure. Goller ended up joining the congressman's staff and setting up McClure's Idaho office. Over the years, McClure went on to become a U.S. senator and one of the most powerful members of Congress. Goller went on to become the senator's chief of staff. As such, he oversaw staff operations for the

Committee on Energy and Natural Resources and McClure's subcommittee on appropriations, as well as the senator's personal staff.

During that time, when Council members visited Senator McClure's office to brief him on regional issues, Goller was either with the senator or stood in for him. He also worked at times with Idaho's two Council members.

While the contacts were brief, the issues appealed to him. "The work interested me," Goller said. "If I hadn't been asked to be on the Council, I would probably have stayed with McClure."

Goller is an Idaho native, who grew up on a family farm near the town of Hansen. He still has an interest in his original printing business, now known as Goller Publishing, but it is principally owned and operated by members of his family.

Q. What do you see as the Council's priorities during the next year?

First, the power plan must be finalized. We have a very ambitious hearings schedule to complete. The comments have to be analyzed and debated, and a final product must be adopted in a timely manner. Many statements have been made that this is the most important plan the Council has prepared to date, and it is true. I believe we now have the attention of the region—utilities, environmental groups, politicians, fish advocates, agencies, tribes, consumers—the whole gamut of society. They expect us to deliver a plan that is understandable and doable.

At the same time we are finalizing the power plan, we must turn our attention to the fish and wildlife program. I do not believe the public understands the linkage between the two. In fact most people, and this probably includes some members of the Council and staff, look upon the power plan and the fish and wild-



JIM GOLLER

life program as two separate plans or programs.

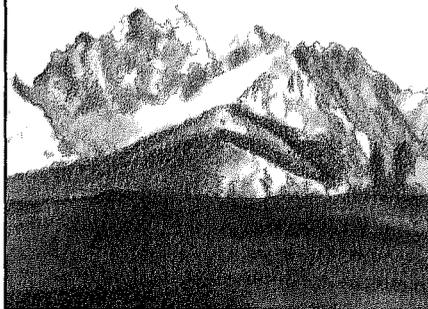
The Northwest Power Act tells us that we are to develop a power plan and a fish and wildlife program that shall consist of measures to protect, mitigate and enhance fish and wildlife affected by the development, operation and management of the region's hydroelectric facilities, *while assuring* the Pacific Northwest an adequate, efficient and reliable power supply that is cost-effective.

These are major policy decisions that we will face in 1991. Because of the potential endangered species listing of certain salmon stocks, the Salmon Summit,¹ which has brought a new and wider range of players into this discussion, and the fact that the region will have to start acquiring new sources of electrical energy, the Council may be required to expand its horizons and venture into areas where previous Councils believed they should not tread.

Q. What do you expect to see as the biggest issues before the region in the next 10 years?

Growth, a shifting population and a changing economy will be big issues for the region. I believe you will continue to see a shift of business from California and the Southwest into the Northwest. As the Puget Sound area fills up, other areas will be impacted, not only within the "I-5 Corridor," but east of the Cascades as well. Montana will probably be the least impacted. This growth will bring continuing pressures on the power system, fish and wildlife, and the environment.

The Council may be required to expand its horizons and venture into areas where previous Councils believed they should not tread.



The big issue for the Council will be the monitoring and implementation of the plan and program so we are able to revise them quickly to meet demands, if necessary. If the Council's power plan and fish and wildlife program are to guide the region, it will take active participation by the Council, as a partner with the various entities in the region, to see that they can and will be properly implemented. I see this proactive participation as the Council's major challenge in the next decade.

Q. Throughout its history, there has been talk about the proper role for the Council, ranging from merely advisory to that of a regulatory body. What do you see as the proper overall role for the Council in the region?

I believe Congress could have done a better job in defining the role of the Council. It certainly left lots of grey areas and confusion. The Council is not and should not be, in my opinion, a regulatory body. While it is an advisor to the region, it is more than a "merely advisory" body.

The Act did not direct the Council to just advise the region on electric power and fish and wildlife matters. The Act directs the Council to prepare a power plan and a fish and wildlife program to guide the region in these matters. Guiding, in my opinion, is much more than advising. How the Council guides is the real leadership challenge.

The Act requires the Bonneville Power Administration's action to be consistent with the power plan and requires the Bonneville administrator to use his fund to implement the fish and wildlife program. Other federal agencies are required to take our plan and program into account at

1. The Salmon Summit was called for by Oregon Senator Mark Hatfield and the governors of Idaho, Montana, Oregon and Washington to address concerns that certain Columbia River salmon runs are near extinction. The Summit brought together organizations with interests affected by river operations and charged them with drafting a management plan that can stop the decline of these and other runs.

every relevant step in their decision-making. Some perceive these as pretty squishy words that don't carry much direct authority, but they do give the Council the opportunity to develop working relationships with the various entities and oversight responsibility as the plan is implemented.

The fact that the Council itself is a direct representative of the governors of the four states should carry more than a casual response from state agencies.

I guess to sum it up, I see the Council as an agency that establishes guidelines and recommends actions for the region in matters of electric power planning and acquisition, and develops a program that is more than "merely advisory," to protect, mitigate and enhance fish and wildlife affected by the operation and development of the hydroelectric system.

Q. In your view, what have been the greatest contributions—or successes—of the Council in its first 10 years?

I believe the greatest successes have been in power planning. When the Act was first passed, utilities and Bonneville viewed the Council as an unnecessary intrusion into their domain. For years, there was friction and a feeling that we were meddling in their affairs, didn't really know what we were doing, and the region would be better off without us.

Today, I believe the feeling is reversed. The Council has established power planning techniques and procedures that all utilities use as a pattern for their plans.

The fact that the Council itself is a direct representative of the governors of the four states should carry more than a casual response from state agencies.



Conservation is now generally accepted as a resource that utilities can and should acquire.

Bonneville and the Council now work together to develop much of the data that is used in our planning process. Bonneville and the utilities look to the Council to explore new ideas.

It appears to me that the Council is beginning to be accepted in the institutional role that Congress envisioned when it adopted the Act.

Q. Conversely, what has been your biggest disappointment?

I believe, the fish and wildlife program. It appears to me that the Council has not been able to move into the leadership position for fish and wildlife programs in the same manner as it has on the power side. I realize it is much more uncertain and, in many ways, more difficult. However, I still see friction and competition for authority in this area that is not productive.

It appears to me that some members of the tribes and fish and wildlife agencies believe they should develop the programs and the Council should be the pass-through to Bonneville for funding. While I realize that the Act directs us to solicit comments and work with the tribes and agencies, it is still the responsibility of the Council to develop the programs and make the major policy decisions.

The operators of the hydroelectric dams, the utilities, the tribes and the fish agencies have not viewed the Council as a full partner in the operation of the system and in the development of fish and wildlife programs. They get very nervous when the Council starts talking about flows, fish passage, fish transportation and the like.

I believe there is much more to be done to reach a regional consensus in this area. Possibly the Salmon Summit will move everyone in this direction.

Q. If you could change the Northwest Power Act, would you? If so, what changes would you make?

A most difficult question. I am not certain I would do much. The Act seems to be working pretty well. If you start tinkering with it, the whole concept could fall apart. I guess I would clean up the grey areas dealing with the Council's authority and responsibility, if I had the opportunity. I believe the Council must start looking at the entire energy picture in its planning process. We are doing some of that and probably can continue without additional legislative authority.

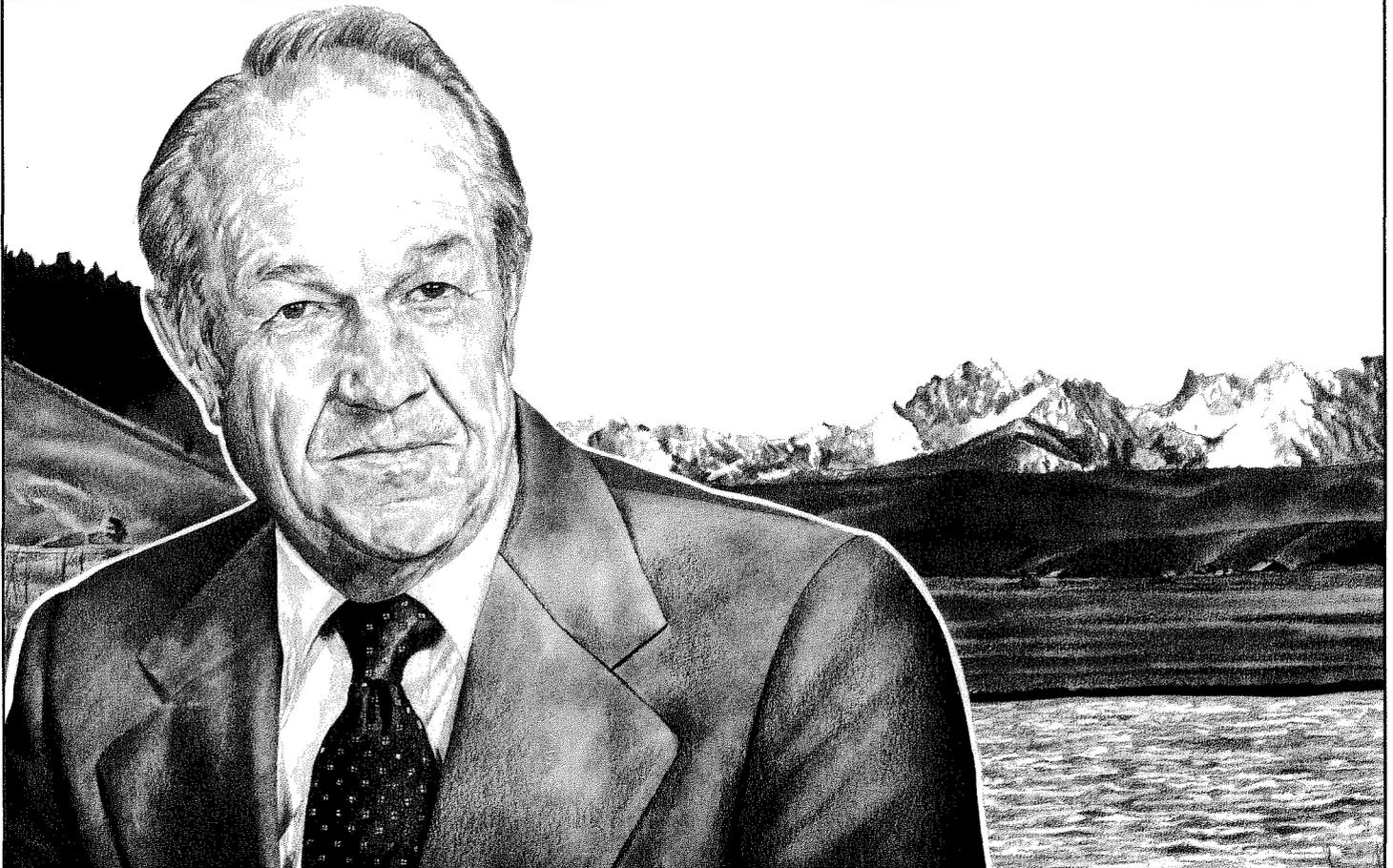
It took Congress several years of intense hearings and debate to develop the Act. It would be foolhardy for me to propose many changes in an interview such as this without much more thought.

Q. On a day-to-day basis, the Council works more closely with the Bonneville Power Administration than any other agency. Over the years, the relationship between the two agencies has changed and developed. How would you characterize the relationship today?

I believe the relationship is good. We serve as a check and balance to each other. Bonneville should not be able to make major policy decisions without outside review. The Council provides a major forum in this regard. By the same token, the Council cannot presume that it will always

make the right decision. The review Bonneville gives the actions of the Council helps bring about a proper balance.

Senator [Dan] Evans, I believe, coined the phrase of "creative tension" between Bonneville and the Council. I see much of the tension gone, but I believe we'll still need much creativity. ■■



SQUARING OFF ON THE SYSTEM PLAN

by Carlotta Collette

No consensus emerging from salmon planning effort.

"This draft plan...appears solely oriented toward increasing production for harvest, usually at the expense of native stocks."—Pacific Northwest Utilities Conference Committee

"The plan's anti-fishing bias reaches an apex of impropriety when the drafters conclude that yet another layer of harvest constraint on the public fisheries will be needed..."—Oregon Salmon Commission

"Anyone looking at the plan from a resource management point of view must conclude that increased harvest is to be achieved at the expense of genetic resource conservation."

—Department of Animal Science, University of California, Davis



"The [plan] does not adequately address the conservation of wild stocks."

—Bonneville Power Administration

"I...am especially glad to see the emphasis on natural production and protection of wild stocks."

—Idaho Attorney General

"Nowhere does the [plan] offer more than lip service to the protection of wild fish and their habitats."

—Oregon Trout

No one said it would be easy. When the Northwest Power Planning Council called for a detailed analysis of ways to increase salmon populations in more than 30 subbasins of the Columbia Basin and integration of the findings into a systemwide strategy, everyone knew the project was an ambitious one and one certain to be charged with debate.

Everyone wants more fish, but beyond that, nearly everything in the draft systemwide plan is contentious.



The Council contracted out the multiyear endeavor to fisheries managers represented by the Columbia Basin Fish and Wildlife Authority.¹ More than three years later, comments on the Authority's Draft Integrated Salmon and Steelhead Production Plan have proved the predictions right. Everyone wants more fish, but beyond that, nearly everything in the draft systemwide plan is contentious.

The Authority began this process by forming advisory groups of local experts to help it compile data on each subbasin. The groups studied the watersheds, landscapes, climates, plant and animal communities, histories, and the status of salmon and steelhead populations there. They were looking for ways all of these elements influence the quantity and quality of the salmon habitat and the salmon and steelhead that rely on it.

During the past two years, the subbasin plans that evolved from this study were distributed for public review, revised and released again for additional scrutiny. After comments from that review were incorporated, the subbasin plans were merged into a single, Columbia Basin systemwide plan. That integration introduced factors that affect all of the basins, such as harvests of salmon in both the ocean and the river, and the effects of hydroelectric dams.

In 1987, the Council had amended its Columbia River Basin Fish and Wildlife Program to incorporate both a goal—to double adult salmon and steelhead populations from 2.5 million to 5 million²—and a set of policies to guide that doubling effort. Key among those policies was the understanding that rebuilding salmon and steelhead populations would require three interdependent kinds of activities:

1. a mix of production methods that protect weak stocks while increasing salmon and steelhead populations;
2. measures that increase fish survival at and between the dams on tributaries and especially on the mainstems of the Columbia and Snake rivers; and
3. more sophisticated ways to control ocean and inriver harvests so that the weakest runs are protected when harvesters are attempting to bring in other stocks.

The Authority was directed to aim its planning process at the doubling goal and keep mindful of the interdependence of production, passage improvements and

harvest controls. But further language in the program also guided the Authority's effort: "numbers will not drive this program to the exclusion of other important values, such as conservation of genetic resources."

Both the subbasin planning process and the subsequent effort to fold the subbasin plans into a single, comprehensive systemwide strategy were extremely complicated endeavors. The individual subbasin plans stack up more than a foot-and-a-half high. Hundreds of local and regional experts contributed their skills to the assessment.

The Integrated System Plan is slim by comparison, only 450 pages. But the act of linking the subbasin plans and incorporating larger influences was even more difficult than assembling the individual plans. None of the products is a perfect piece, but when comment began to pour in on the Draft Integrated System Plan, it was hard to believe that people were reading and responding to the same document.

Is it just a hatchery plan or one that affords ample protection for wild stocks? Will it complicate or simplify harvest problems? Does the plan reflect the most radical theories of fish genetics or is it just business as usual? Is it remarkably comprehensive or woefully inadequate?

It depends on the reader.

1. The Columbia Basin Fish and Wildlife Authority represents state and federal fish and wildlife agencies and 13 Indian tribes.

2. Total run size is generally calculated by adding the number of fish entering the mouth of the Columbia to the number of Columbia River stocks taken in the ocean fisheries.

“The Council didn’t expect the Basin Authority’s system plan to settle all the conflicts over salmon,” explains Ted Bottiger, the Council’s vice chairman from Washington and chairman of the Council’s fish and wildlife committee. “The system plan should form the basis for a recovery plan, but we’re still a long way from a consensus on precisely what to do where.”

Part of the problem is the lack of definitive information. As British philosopher Bertrand Russell once pointed out: “The most savage controversies are those about matters as to which there is no good evidence either way.” The subbasin plans may have answered a bounty of questions specific to each watershed, but the biggest issues still lack the basis for reconciliation. The debate can be neatly outlined along the lines of the three areas of activity: mixed production measures, mainstem passage improvements and harvest.

A mix of production measures

The most intense disagreement seems to center on what the plan endorses or does not endorse:

- Does the draft system plan lean toward hatchery production designed largely to support harvests of fish?
- Is so-called “natural” production featured, using “supplementation,” where young hatchery-reared fish are released into streams?
- Or is wild production, which would focus primarily on repairing spawning habitat and improving passage for migrating fish, the key strategy in the plan?

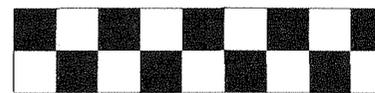
Each approach has advantages and disadvantages. For example, the hatchery-to-harvest approach may be the quickest way to obtain large numbers of fish. Harvest restrictions could eventually be loosened, and the Northwest’s sport and commercial fisheries would benefit, creating jobs and adding tourist dollars to the region’s economy. But hatcheries already supply more than 70 percent of the Columbia’s salmon and steelhead. There are concerns that this degree of dependence can leave the fisheries vulnerable to diseases and other problems that seem to cluster in hatcheries.

The draft system plan calls for construction of as many as four new hatcheries (young fish from the hatcheries also will be used to supplement natural runs). But the Columbia River Inter-Tribal Fish Commission, which represents four Northwest tribes, argued in its comments: “Given the number of hatcheries already in existence, and their potential to conflict with, rather than augment natural runs,...it would seem prudent to consider altering the species composition in many existing hatcheries as well as altering the operation of existing hatcheries.” Inter-Tribe did agree that “more effort must be devoted to release strategies designed to utilize what is often abundant rearing habitat in the natural environment.”

These “release strategies” fall generally into the category of supplementation. Supplementation takes advantage of existing habitat. The hope is that hatchery fish released into streams return to those streams and reproduce naturally. While supplementation

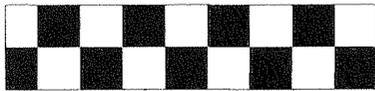
is not an altogether new practice, there is new concern that hatchery fish compete with and in other ways endanger wild fish in the streams where hatchery fish are released. As a consequence, many view supplementation as an experimental approach. Genetic considerations will be a critical element in the review of stocks and selection of streams for supplementation experiments.

Both traditional hatchery production and supplementation are useful especially for quickly increasing numbers of fish. If, on the other hand, protection for weak native runs is the region’s greater need, the long-term sustainability of all basin runs could be enhanced, but the process is not a quick fix. Wild fish production relies on habitat and passage improvements.



**“Numbers
will not drive
this program
to the
exclusion
of other
important
values,
such as
conservation
of genetic
resources.”**

**—Columbia River
Basin Fish and
Wildlife Program**



To repair and clear passage into habitat, fisheries biologists often spend years in a single basin, planting shade trees to cool the water, positioning downed tree trunks and other large objects to slow the flow and create resting pools for migrating fish, and in many subtle ways trying to imitate nature to lure wild fish in. Genetic considerations are paramount.

Fisheries biologists explain that fish from each particular stream carry unique genetic traits. Some of these traits, for example, may enable fish to swim longer distances or survive in warmer or colder water. Scientists

argue that the diversity of these traits provides insurance against catastrophic losses. If there are a variety of fish with different survival abilities, no single disease or other hazard is likely to kill off all the runs.

In hatcheries, by way of contrast, both the crowding and the lack of genetic variety mean that a single disease can infect all the young fish, either killing them outright or making them carriers able to infect other fish outside the hatchery.

No one production practice satisfies everyone concerned about salmon in the Columbia Basin, and all three approaches are discussed and recommended in the plan. It is the degree of perceived prominence that is being questioned by commentators.

“By one count,” wrote the Pacific Northwest Utilities Conference Committee, which represents Bonneville customer groups, “there are 273 ‘strategies’ listed in the [Integrated System Plan], of which 239 relate to hatchery production, and only 22 aim at the recovery of native [salmon] populations. Yet regional interest has shifted toward the need to conserve indigenous [wild] stocks.”

Regional interest shifted largely in response to Endangered Species Act petitions that were filed last spring. These petitions asked that five Columbia Basin salmon stocks—Snake River spring, summer and fall chinook and sockeye, plus lower Columbia River coho—be listed as either “threatened” or “endangered” to reverse their decline.

The potential listings turned up the heat under the region’s already hot fisheries fights. They drew more attention to the fact that not all of the Columbia’s salmon runs are responding to the past decade’s major push for their recovery. If the Endangered Species Act is invoked in this case, nearly everyone who relies on the river system, whether for electricity, irrigation, navigation, recreation or fish, could be affected.

The draft system plan describes about 55 percent of all Columbia Basin runs as “depressed.” But nearly three-quarters of the runs of salmon returning to streams above Bonneville Dam fit that description. And these streams and runs have been accorded priority in the Council’s fish and wildlife program. Unfortunately, Bonneville Dam is only the first of more than a dozen major dams that block the path of the river’s migrant fish.

Mainstem passage

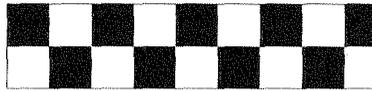
A close second to production, in terms of capacity to generate arguments, is the issue of how to improve juvenile fish survival at and between the Columbia’s huge hydropower dams. In its study of aboriginal salmon runs and historic losses, the Council concluded that the dams account for about 75 percent of the decline in salmon populations since development began in the region about 100 years ago. Even before coming to that determination, the Council included in its first fish and wildlife program a “water budget” to speed juvenile fish

moving through reservoirs, and called for installation of fish screens and bypass channels at mainstem dams to protect the young migrants from turbines.

The water budget takes a specific quantity of water, which in the past would be held to generate power later in the year, and releases that water when the young fish are in the river system, usually in spring and early summer. Sometimes called the "fish flush," this release of water is an attempt to imitate the spring runoff that existed before the dams were built. The water budget shortens the amount of time it takes the fish to travel to the sea. This factor is critical because of the biological changes the fish are undergoing to move from freshwater to saltwater. Hastening fish through the system also reduces their exposure to predators and inhospitable water temperatures.

The screens and bypass channels can save millions of fish at each dam by diverting them from turbine intakes. Properly installed and operating bypass systems can cut in half the number of fish killed by turbines during their downstream journey. But screens and bypass channels are also controversial, and their installation has been repeatedly delayed by conflicts and budget concerns. The schedule for completion of permanent bypass facilities at all the dams has been dropped to 1998.

Until the screens are in place, the Council helped negotiate an agreement on amounts and timing of special spills of water over the dams to carry fish away from the turbines. However, the spills are costly in terms of lost power sales; water released over spill bays doesn't generate electricity.



Certain fish are also collected at upriver dams, loaded into trucks and barges and transported to below the Columbia's dams. This system, carried on by the U.S. Army Corps of Engineers, seems successful for some species, but less so for others.

Recent years with below average rainfall, runoff and salmon returns have necessitated a re-evaluation of the issue of mainstem passage. The threat of Endangered Species Act designation adds to the pressure to re-examine both increases in flows and rapid completion of bypass facilities.

A major element in the recovery plan drawn up by the Basin Authority is its proposal to increase flows to move fish out of the Snake and Columbia rivers more quickly. The Authority argues that additional flows will improve fish survival substantially, but others contend that there is little biological basis for such a conclusion.

The Corps of Engineers, for example, wants to see research data that could support the Authority's claims that survival rates will go up if flows are increased. The Corps further maintained that "the analysis should be documented."

And the Pacific Northwest Utilities Conference Committee questions whether increases in flows are even physically possible.

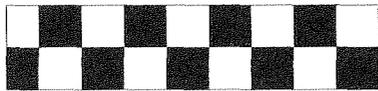
But Oregon Trout, an organization concerned with preserving wild salmon stocks, writes: "state, federal, tribal agencies and the public must build a strategy to increase flows to benefit fish passage. Reducing mortality at mainstem dams and through reservoirs...is the best form of wild fish enhancement available."

Harvest management

It is not easy to protect some salmon stocks while allowing fishing for others. The salmon tend to swim together, whether they are rare upriver wild stocks or lower river hatchery offspring. To reduce the catch of weaker stocks, limits often are set on the taking of any fish swimming alongside the critical fish.

**“The salmon
are so
important
to so many
people...it’s
bound to be
contentious.”**

**—Council
Vice Chairman
Ted Bottiger**



Furthermore, the Council has negligible authority to alter the timing of commercial or sports fishing seasons or the stocks taken. Nonetheless, the Council has been able to influence harvests by supporting recommendations of harvest managers and encouraging negotiations that set harvest limits for Canadian and U.S. fisheries in the Pacific. The shrinking runs of salmon have had a powerful effect on the commercial fisheries, forcing shorter harvest seasons than ever before.

The Pacific Northwest Utilities Conference Committee comments that “naturally produced salmon stocks originating in the Columbia River may need additional protection in the mixed-stock fishery.”

But Tom Robinson, commenting for the Oregon Salmon Commission, questions whether this so-called “mixed-stock fishery” is quite the problem others consider it to be. The commission repre-

sents commercial fishers. “The clear fact of the matter is that harvest is not now a significant part of the problem for Columbia River stocks,” Robinson argues.

The Council’s Ted Bottiger suggests that, “One purpose for doubling the runs is to provide more harvest opportunities, but there may need to be changes in how harvests are regulated. Certainly, marking hatchery fish more clearly will help, or centering more fisheries at tributaries or nearer hatcheries. The point is, we need to get more sophisticated about regulating harvests,” he adds.

On this question, Oregon Trout’s Bill Bakke makes a similar point. “Harvest methods ought to move toward known-stock fisheries and use live-catch methods so that wild stocks can be released.”

What’s next?

The frankness and specificity of comments on the Integrated System Plan indicate the level of involvement and sincerity of those dedicated to rebuilding the salmon runs. For some, the salmon are their livelihood. For others, salmon represent a cultural and spiritual heritage. For still others, resolving the “salmon problem” as cheaply and quickly as possible is the goal.

The Basin Authority has an enormous challenge: to complete the Integrated System Plan and present it to the Council as a proposal to amend the Columbia River Basin Fish and Wildlife Program. The Council expects to begin a public review of this amendment proposal this spring.

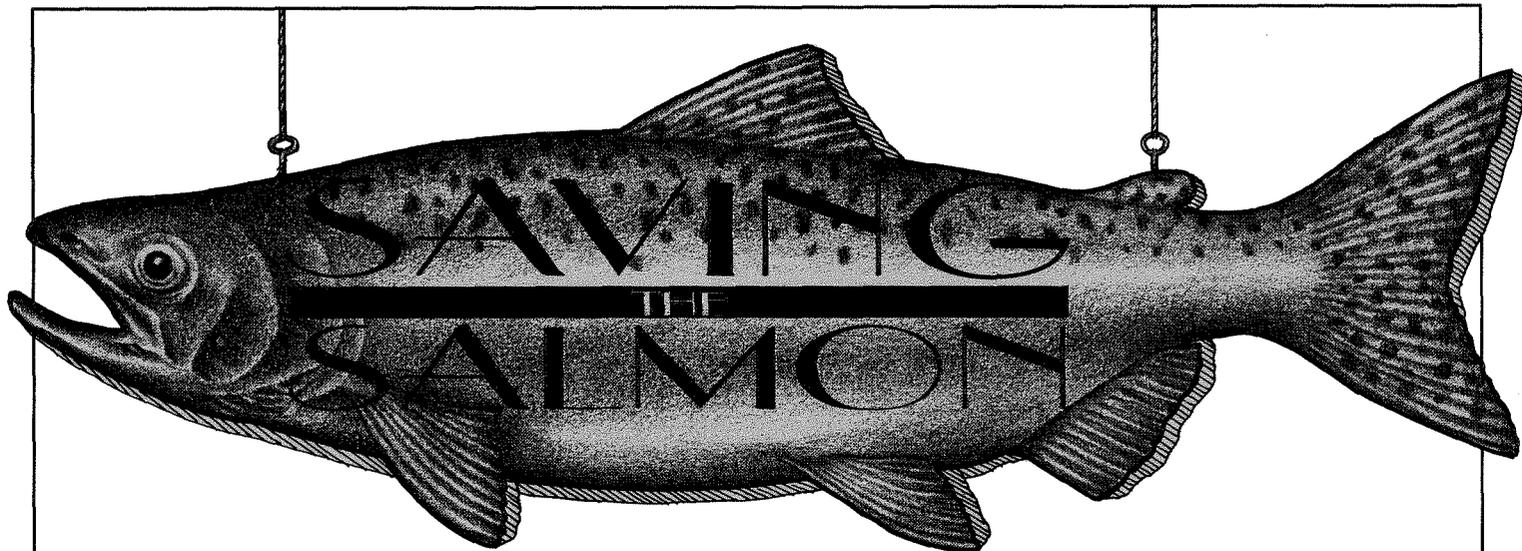
Because questions regarding genetic consequences and relative cost-effectiveness of many of the activities in the plan still lack resolution, the Council has asked the Authority to follow up its plan with additional studies of these two issues. These are expected later this summer.

In the meantime, the Council and the Authority will continue to meet with interested parties to pull a biologically sound approach from this conflict.

By early winter, the Council hopes to have compiled its own draft amendments to the fish and wildlife program, based on the Authority’s effort and the comment of interested parties.

Over the winter of 1991-1992, hearings will be conducted throughout the region, and comment will be taken. By next spring, the Council expects to be ready to adopt these major changes in the fish and wildlife program. (For relative timing of other major fisheries activities in the region, see related story.)

“This has been a long, grueling process,” notes the Council’s Bottiger. “The salmon are so important to so many people for so many different reasons; it’s bound to be contentious. But we’re committed, I think everyone is committed, to seeing this thing through to a resolution. Because of all the uncertainty about what works and what doesn’t, the Council’s approach stresses the experimental testing of measures rather than a gung-ho attitude that one way is the right way. We think this approach will best serve all of us, including the salmon. We’re in this for the long haul, and that’s what it’s going to take.” ■■



CONVERGING EFFORTS

by Carlotta Collette

Who's doing what, why and when.

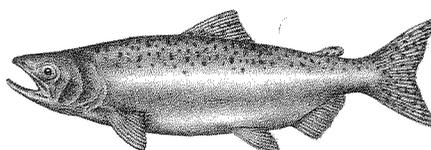
The century-long decline of salmon and steelhead runs in the Columbia River Basin has prompted numerous responses, but no single effort has entirely reversed the decline. While some runs have gradually improved in the past decade, others still are in a diminished state. There appears to be agreement that some of these more vulnerable runs are not likely to survive without rigorous intervention.

The Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program was, and remains, the most comprehensive approach to saving these fish. The program contains a mix of measures designed to increase salmon and steelhead survival through every phase of their life cycles. There are projects to repair habitat and increase the reliability of hatcheries so more young salmon survive the first weeks of their lives; major physi-

cal and operational improvements at mainstem Columbia and Snake river dams to better the chances that the fish can safely migrate downriver and upriver; coordinated research, computer modeling and data collection; and recommendations regarding salmon and steelhead harvesting.

But additional intervention will be the likely outcome of recent petitions to list five Columbia River salmon runs under the Endangered Species Act.

The shape of that stepped-up intervention is being addressed in at least three major forums:



Amendments to the Columbia River Basin Fish and Wildlife Program. In 1987, the Council contracted with the Columbia Basin Fish and Wildlife Authority¹

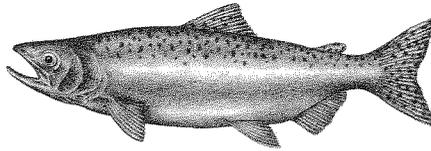
to conduct a detailed analysis of salmon and steelhead production opportunities in more than 30 major subbasins of the larger Columbia Basin (see "Squaring Off on the System Plan" in this issue). This planning process was aimed at the Council's goal of doubling the number of Columbia River Basin salmon and steelhead in a biologically sound and sustainable manner. The draft subbasin plans were reviewed extensively by the public, and a systemwide plan integrating the subbasin plans was drafted.

Using the Integrated System Plan as a base, the Council will produce a package of draft amendments to the fish and wildlife program late this year. After

1. The Columbia Basin Fish and Wildlife Authority (CBFWA) represents state and federal fish and wildlife agencies and 13 Indian tribes.

public hearings, the Council is expected to adopt changes to the program early in 1992. However, a number of actions are being identified for early implementation to aid weak stocks of salmon. The Council may move these portions of the system plan up for a decision this spring.

In addition, the Council has been analyzing the amount and timing of flows to determine if they are adequate to speed young fish through the system, or if there are other actions that could improve fish survival at the dams. This work is being coordinated with the "Salmon Summit" (see below). The Council may consider these actions as amendments to the fish and wildlife program, if there is no consensus in the Salmon Summit.

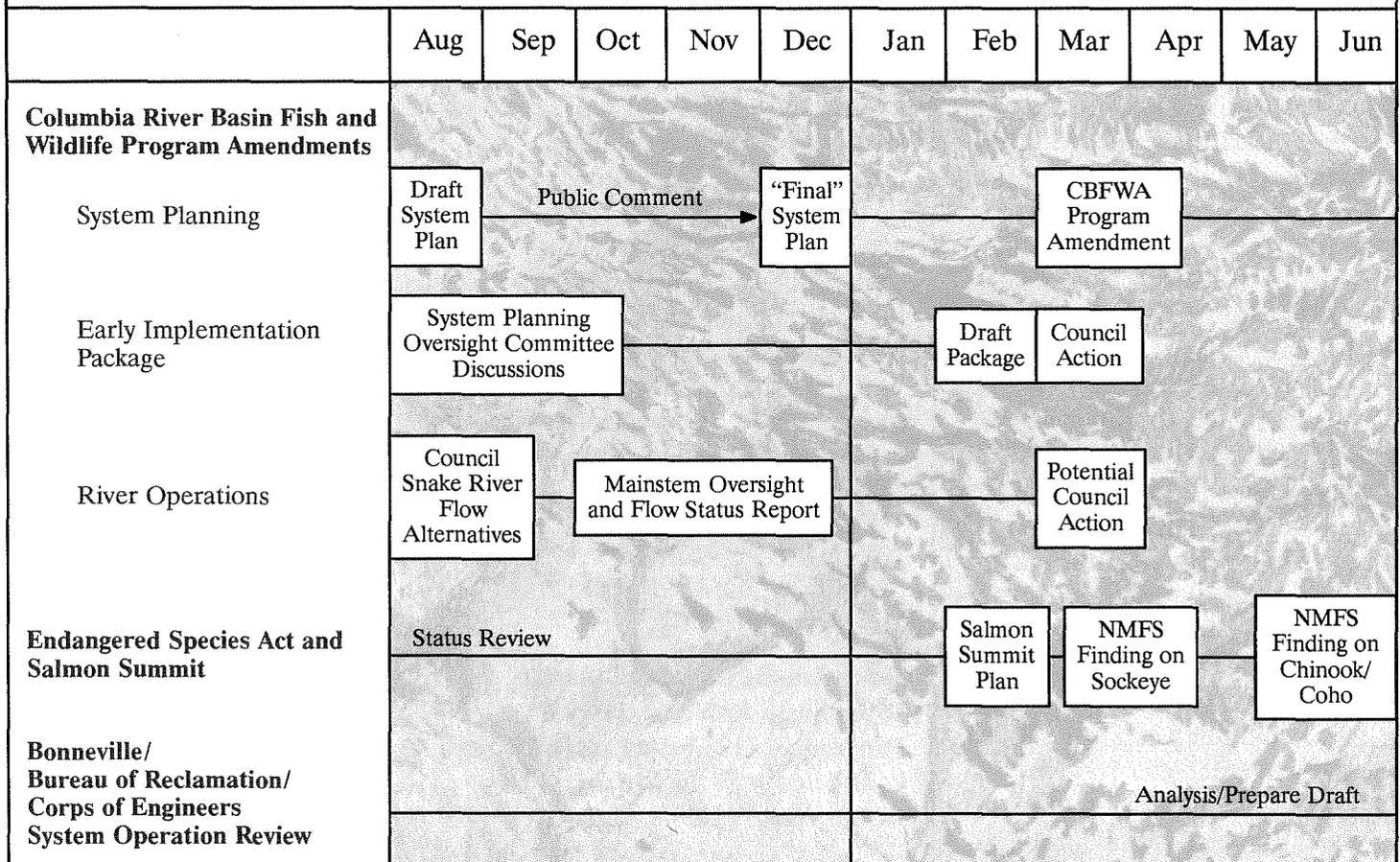


The "Salmon Summit" that was convened to produce a management plan for Columbia River salmon in response to Endangered Species Petitions. In March and April 1990, petitions were filed with the National Marine Fisheries Service (NMFS) to list five species of Columbia River salmon as endangered or threatened. If these fish are listed (the entire process will take about two years from the date the petitions were filed), all uses of the Columbia River could be affected.

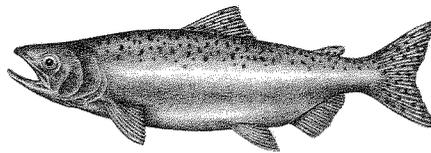
Oregon Senator Mark Hatfield and the governors of Idaho, Montana, Oregon and Washington asked the Council to pull together key regional representatives from the fishery, power, irrigation and navigation communities to begin the dialog necessary to address the status of these runs. Hatfield encouraged this group to develop a plan that would protect vulnerable wild salmon runs. The group is working with a mediator funded by the Council, the Bonneville Power Administration and the states to design a new management plan for the fish. The Summit has met numerous times over the fall and winter, but as this publication was being printed there was no general agreement on specific actions.

1990

1991



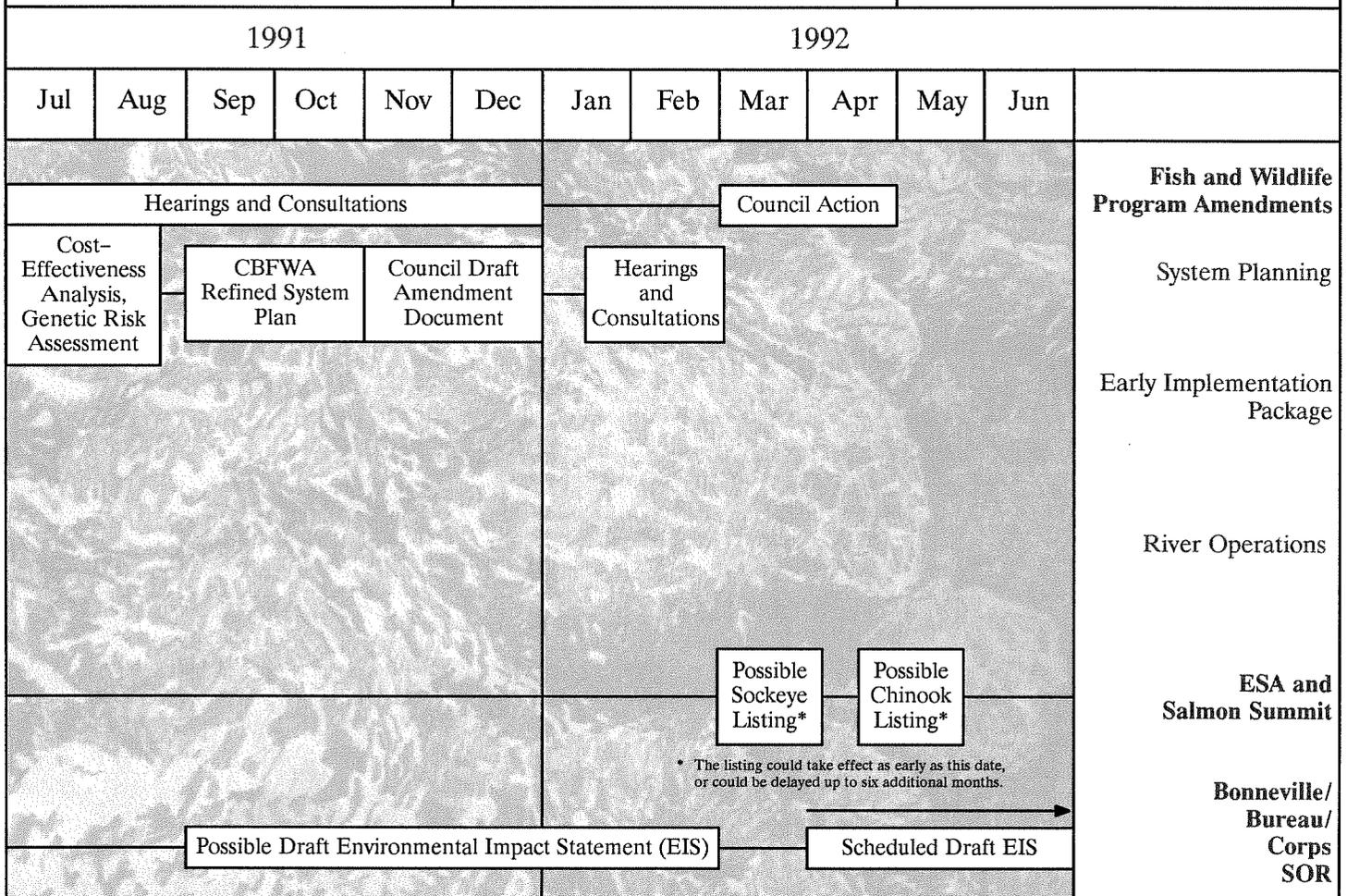
The Columbia River Basin Fish and Wildlife Program was, and remains, the most comprehensive approach to saving these fish.



The "System Operation Review" being coordinated by the Bonneville Power Administration, the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation. This review is expected to cover all of the purposes for which the dams are operated: power generation, flood control, irrigation, navigation and recreation. It also will explore trade-offs that affect the salmon and steelhead during their migrations past the dams. The review was initiated in part because certain agreements and treaties regarding management of the Columbia's dams are due to be renegotiated

in the coming decade. One product of this review will be a new environmental impact statement covering operations of the hydro system.

Because of the broad scope of this review, the three key federal agencies involved expect the entire process to take three years. However, they have discussed the need to speed parts of their process, if there are proposals to aid weak stocks in this spring's fish runs. For example, a draft environmental impact statement could be out as early as the fall of 1991, if there are changes called for in the Salmon Summit. A final could be available as early as next spring. ■■



Mining the Conservation Lode

BRIGHT LIGHTS BIG SAVINGS

by John Harrison

Seattle's Lighting Design Lab brings new efficiency to businesses.

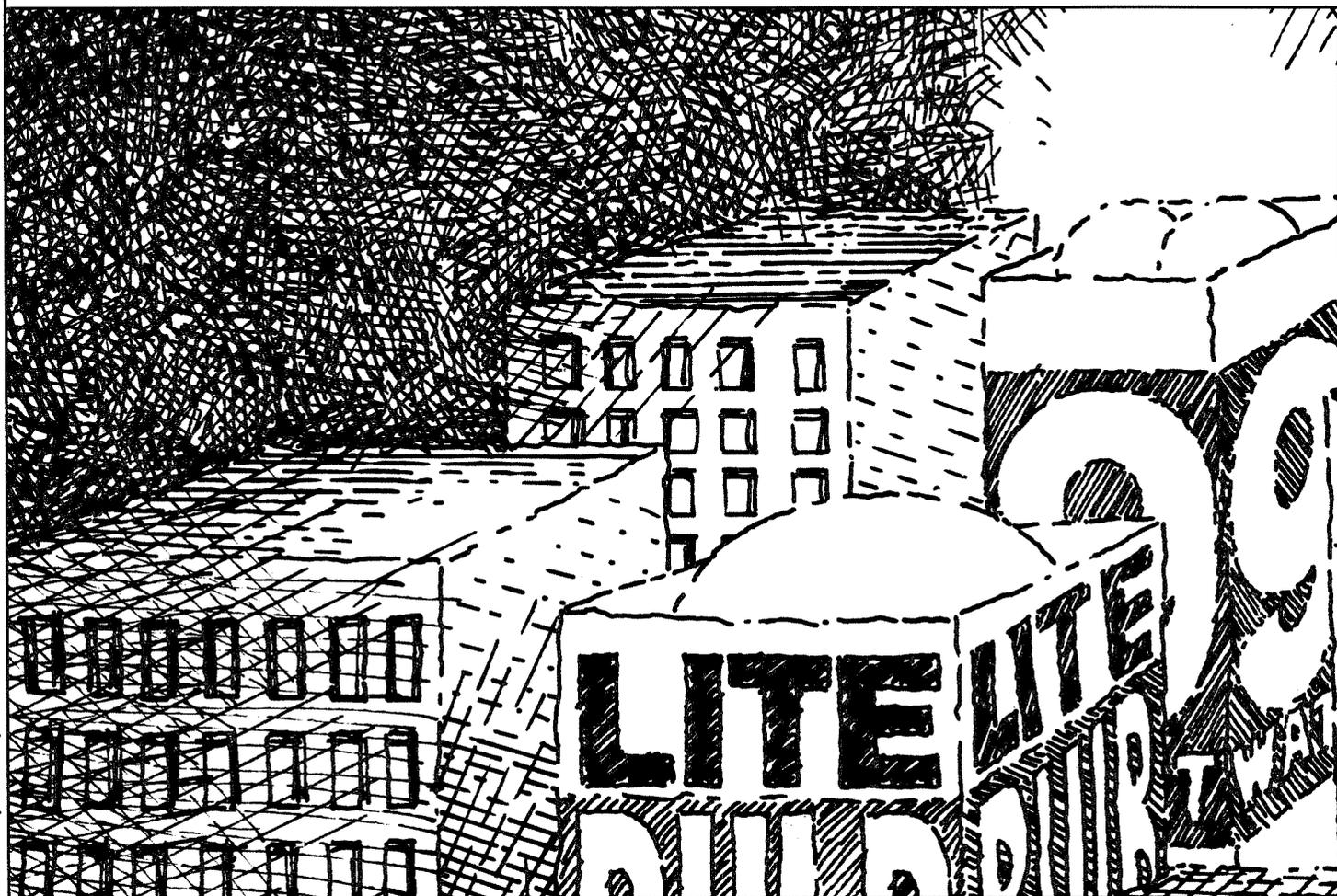


Illustration by Tom Hardy

In a remodeled auto dealership on Seattle's First Hill, there's a restaurant with no diners and no food. There's a theater with no actors, but stages that change periodically and two suspended ceilings that will lower to within five feet of the floor.

There's also a conference room, a library, a classroom, a room where the sun always shines and another where it's always cloudy.

Sound unusual? There's more. This is not a traditional business. What's "sold" here, at the Lighting Design Lab, are ideas, ideas about lighting efficiency. And there is no charge for using the facility.

The focus is on energy-efficiency in commercial buildings. That explains why there are mock-ups of a restaurant, a con-

ference room, a library and two offices. In each, the emphasis is on energy-efficient lighting, such as compact fluorescent bulbs. These bulbs use less energy and give off less heat than conventional incandescent bulbs, yet produce the same amount of light.

In the "theater," formally called the mock-up room, architects, engineers and interior designers can construct actual rooms in order to experiment with lighting configurations, paint colors or furniture placement.

"Our big thing is really technology transfer, implementing the new state of the art," said Diana Campbell, project manager at the lab.

Since December 11, 1989, when the lab opened, more than 6,500 people have visited the facility. Some simply were curious.

Others worked with the lab's staff, producing mock-ups, measuring energy use and fine-tuning designs for a variety of structures and business environments. These mock-ups have ranged from a concourse for Seattle-Tacoma International Airport to a track light system for The Doll Museum of Bellevue.

The idea for such a facility dates to 1985, when the Natural Resources Defense Council, a national environmental group, and the Northwest Conservation Act Coalition asked Seattle City Light to co-sponsor the lab. The utility agreed, and requested financing from the Bonneville Power Administration. Bonneville concurred, chipping in 70 percent of the cost. Other sponsors, including the California Energy Commission, Tacoma City Light, Snohomish County Public Utility District and the Washington State Energy Office, paid the remainder.

Today, financing comes from Bonneville, Seattle City Light, the Natural Resources Defense Council and several participating utilities.

Why the emphasis on lighting? Commercial buildings use about 20 percent of the electricity sold in the Pacific Northwest, and lighting accounts for about 33 percent of the electricity used in these buildings. Efficiencies in commercial lighting can mean big energy savings.

If such efficiencies spread throughout the United States and even to other parts of the world, the result might be a reduction in the amount of fossil fuels burned to produce electricity. That would mean a reduction in the exhaust gasses from these power plants, oxides of sulfur and nitrogen that



are thought to contribute to global warming.

Speaking at the lab's opening ceremony, Ralph Cavanaugh, energy program director of the Natural Resources Defense Council, said "...the contribution of commercial lighting efficiency alone over the next three decades in the United States could surpass the installed capacity of all our nuclear power plants." Cavanaugh explained that these savings would cost less than one-fifth that of electricity from new power plants.

He also noted that Seattle's idea was being copied. Lighting labs are being built in Los Angeles and San Francisco. Portland General Electric includes lighting in its program of activities at its energy-efficiency center in Tualatin, Oregon. And the federal Environmental Protection Agency has begun a campaign to get the nation's 1,000 largest businesses to convert to efficient lighting.

A walk through the Seattle laboratory is a walk through contrasting environments, some familiar, some almost forbiddingly technical. For example, there is the restaurant, a room with walls on three sides and a curtain on the fourth. Different lighting schemes, from wax candles to a single drop lamp suspended from the ceiling, are installed at each table. The curtain can be pulled to imitate a darker, dinnertime atmosphere, or opened to imitate a brighter breakfast or lunch feeling.

In another display, different colored compact fluorescent bulbs illuminate identical white viewing boxes to show the color characteristics and intensities of



Moveable ceilings help designers test lighting options at Seattle's Lighting Design Lab

various bulbs. In each box are identical pop cans, but the different lights cause the cans' color to vary in intensity from box to box. This is because of the different color-rendering abilities of each bulb. Architects and interior designers can choose lights that best match the colors and atmosphere of particular rooms.

"If you have an office space in cool colors, such as grays and blues, you might want a (cooler) light to emphasize that," Campbell explained. "On the other hand, if you are designing a retail store, you would go for a (warmer) light because warmer lights make things look rosy and nice."

In the mock-up room, sets are constructed much like sets on a theater stage. Designers can experiment with furniture and paint, as well as lighting combinations. Twin suspended ceilings

can be raised and lowered with pulleys. The ceilings are wired to accept a multitude of lighting fixtures and combinations.

Pacific Power and Light Company of Portland constructed four separate office "environments" in the lab's theater and then evaluated the psychological response of people to each environment. This information is now part of the utility's commercial lighting program.

And then there's the daylight room, where miniature models of buildings can be studied for their ability to shade or illuminate windows or building spaces. In a corner of the high-ceilinged room, a bright light shines on the study space with the same intensity as sunshine outdoors. Nearby is the cloudy-day room, where mirrors on all four walls provide a bright, shadowless environment for studying still more scale models.

While models and studies are a big part of the work at the lab, the lab also offers classes in lighting fundamentals, lighting controls, outdoor and indoor lighting, and lighting design. In addition to the mock-up rooms, there are displays of lighting fixtures for both indoor and outdoor use. On one wall, for example, is a display of 10 types of sconces.

Campbell says she is excited that the lab supplies new information to engineers and architects. "We keep it simple, but we give them enough information to specify a new technology without taking a big financial risk," she said. ■■

ACCESS

EFFICIENT LIGHTING

Don't look for compact fluorescent bulbs at the grocery store. You're not likely to find them. In fact, many stores that sell residential lighting fixtures don't sell compact fluorescents.

Compact fluorescent bulbs and fixtures have been gaining popularity in *commercial* buildings since the 1980s. They can be purchased at commercial lighting and office supply stores.

Compared to incandescent bulbs, compact fluorescents are expensive to purchase. Compact fluorescent bulb-and-ballast units sell for \$15 to \$26, but they last 10 times as long as incandescent bulbs. Fluorescents also use much less electricity and produce less heat. They come in two styles: integral and modular. Integral bulbs have the ballast and bulb as one unit. The ballast is the device at the base of the bulb that regulates the flow of electricity. In modular bulbs, the tube clips into the ballast.

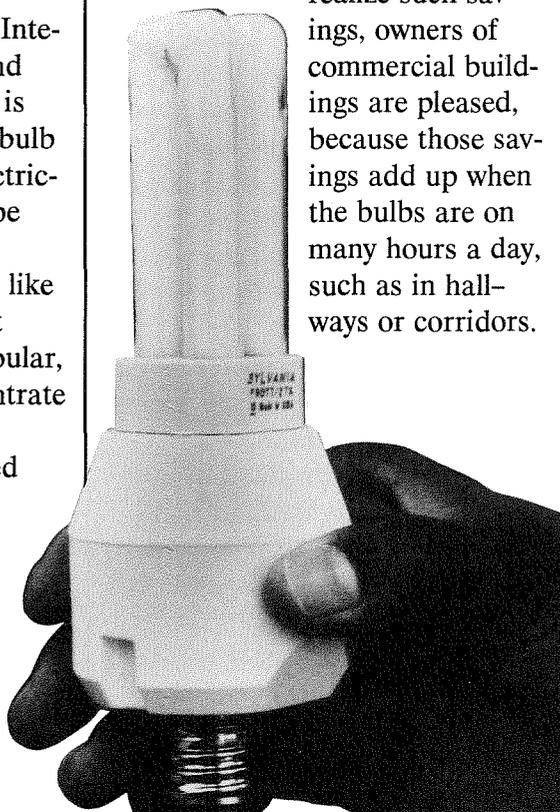
Integral bulbs look a little like traditional incandescent light bulbs. Modular bulbs are tubular, usually bent in half to concentrate the light.

Either style can be screwed into traditional light bulb sockets, but they might not fit under shades or in lamps or fixtures designed for incandescent bulbs.

Even in the Northwest, where the price of electricity is less than in other parts

of the nation, compact fluorescent bulbs will produce savings equal to their purchase price, and more, over time. An 18-watt compact fluorescent bulb produces about the same amount of light as a 75-watt incandescent bulb, yet operates on just one-quarter to one-third as much electricity. Over the average 10,000-hour lifetime of the bulb, the savings would be about 570 kilowatt-hours, according to the 1991 edition of the *Consumer Guide to Home Energy Savings* by Alex Wilson. At 4.55 cents per kilowatt-hour, the Northwest average electric rate, that's \$26.

While you might not plan to keep your lamps for 10 years to realize such savings, owners of commercial buildings are pleased, because those savings add up when the bulbs are on many hours a day, such as in hallways or corridors.



For more information on compact fluorescents and other energy-efficiency measures for commercial and industrial buildings, contact the Electric Ideas Clearinghouse, a division of the Washington State Energy Office in Olympia. The toll-free number is 1-800-872-3568. The FAX number is 1-800-872-3882. An electronic bulletin board is available to computer users at 1-800-762-3319.

Copies of the 1991 *Consumer Guide to Home Energy Savings* can be purchased from the American Council for an Energy-Efficient Economy, 1001 Connecticut Avenue, N.W., Suite 535, Washington, D.C. 20036, 202-429-8873. Bulk rates are available.

—JH

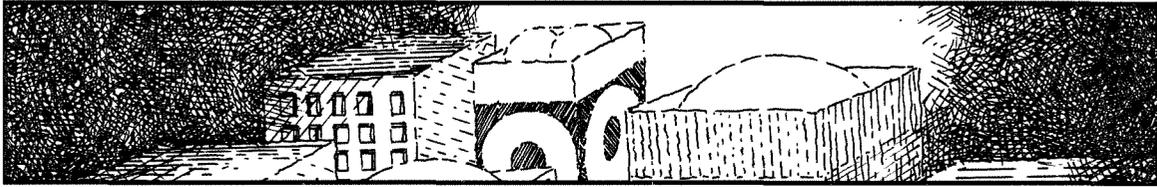
The Value of Efficient Bulbs

(Replace 75-watt incandescent with 18-watt fluorescent)

Savings	Lights on 8 hrs/day	Lights on 12 hrs/day
Savings after 1st year	(\$2.66)	\$1.69
Savings after 2nd year	\$6.04	\$14.75
Savings after 3rd year	\$14.75	\$16.44
Savings after 5th year	\$20.80	\$31.20
Savings after 10th year	\$52.69	\$73.49

Source: 1991 *Consumer Guide to Home Energy Savings*. Numbers were adjusted to average Northwest electrical rates of 4.55 cents per kilowatt-hour.

Sheraton's



Shining Example

by John Harrison

They're increasing the light while decreasing costs.

Customers of the Sheraton Tacoma Hotel had a bright idea, and the hotel cut its energy consumption when it took the advice.

Some 2,000 incandescent light bulbs were replaced with compact fluorescent fixtures. The result is brighter rooms, which please the customers, and energy savings, which please the hotel operators.

The replacement took place last spring and summer. "One of the things that prompted this is that the Sheraton is a business hotel. People do business in their rooms," said Leif Olsen, an energy conservation specialist at Tacoma City Light who worked on the project. "One of the main comments the hotel was getting on the feedback forms was that there wasn't enough light in the rooms."

So management at the 27-story, 320-room hotel set new standards for illumination in

guest rooms. But to achieve those goals, the hotel would have had to install higher-wattage incandescent bulbs. That would have boosted the hotel's energy use.

Instead, the hotel turned to Tacoma City Light, which conducted a walk-through energy audit of the building. In addition to no-cost and low-cost measures, such as turning off lights in rooms that were not in use, the utility suggested retrofitting the incandescent bulbs with energy-efficient fluorescents.

"I'm real happy with the way it went," said Tim Moore, engineering supervisor at the hotel. "We reduced our lighting load by 80 percent and increased our lighting levels by 150 to 300 percent," in areas where the retrofits took place.

In short, more light at a lower cost.

Before the retrofits, each guest room included a work space illu-

minated by a single 150-watt incandescent bulb. By replacing each 150-watt bulb with twin 20-watt fluorescent bulbs, the illumination level tripled, while energy use was only a third what it had been.

The exact amount of savings has not been calculated, because the new lights have been in place only since last August, and it is difficult to break out the lighting load from the entire electrical load at the building. But both Tacoma City Light and the Sheraton have monitoring equipment in place, and the hotel's current chief engineer, Ken Hanson, expects to realize significant savings.

The reliability of the fixtures has been a pleasant surprise so far. "Out of approximately 2,000 fixtures, we've had maybe 15 go bad," Hanson said.

The replacement cost about \$55,000. New lights were installed

in corridors, telephone alcoves, the mezzanine and lobby, as well as in guest rooms. The hotel paid the entire cost and then was reimbursed for 75 percent by Tacoma City Light, with money from the Bonneville Power Administration.

“We were able to offer very attractive financing for saved kilowatt-hours, and we were able to get a real-world test of what we thought was cost-effective,” Olsen said.

He said the future is bright for compact fluorescents, as businesses search for savings.

“I think we’ll see this sort of thing more and more in the future,” he said. A Tacoma hospital has expressed interest, and retrofits should be popular “anywhere there are corridors with 24-hour lighting,” he added. ■

Urban Wildlife

There’s more than energy conservation under study at the Sheraton Tacoma Hotel. There’s wildlife, too, in the form of a peregrine falcon.

A peregrine, fastest and fiercest of the raptors, is using the 27-story building as a hunting and dining perch. Peregrines have been known to perch atop urban highrise buildings as they hunt smaller birds. The Sheraton’s falcon is doing just that, bringing

pigeons from the tidal flats about a mile to the north.

But the Tacoma experience is a little different. This falcon dines on the window ledge outside the The Rose Room, the five-star restaurant atop the building. Sometimes the bird devours its prey in front of diners, who are alternately aghast and enthralled.

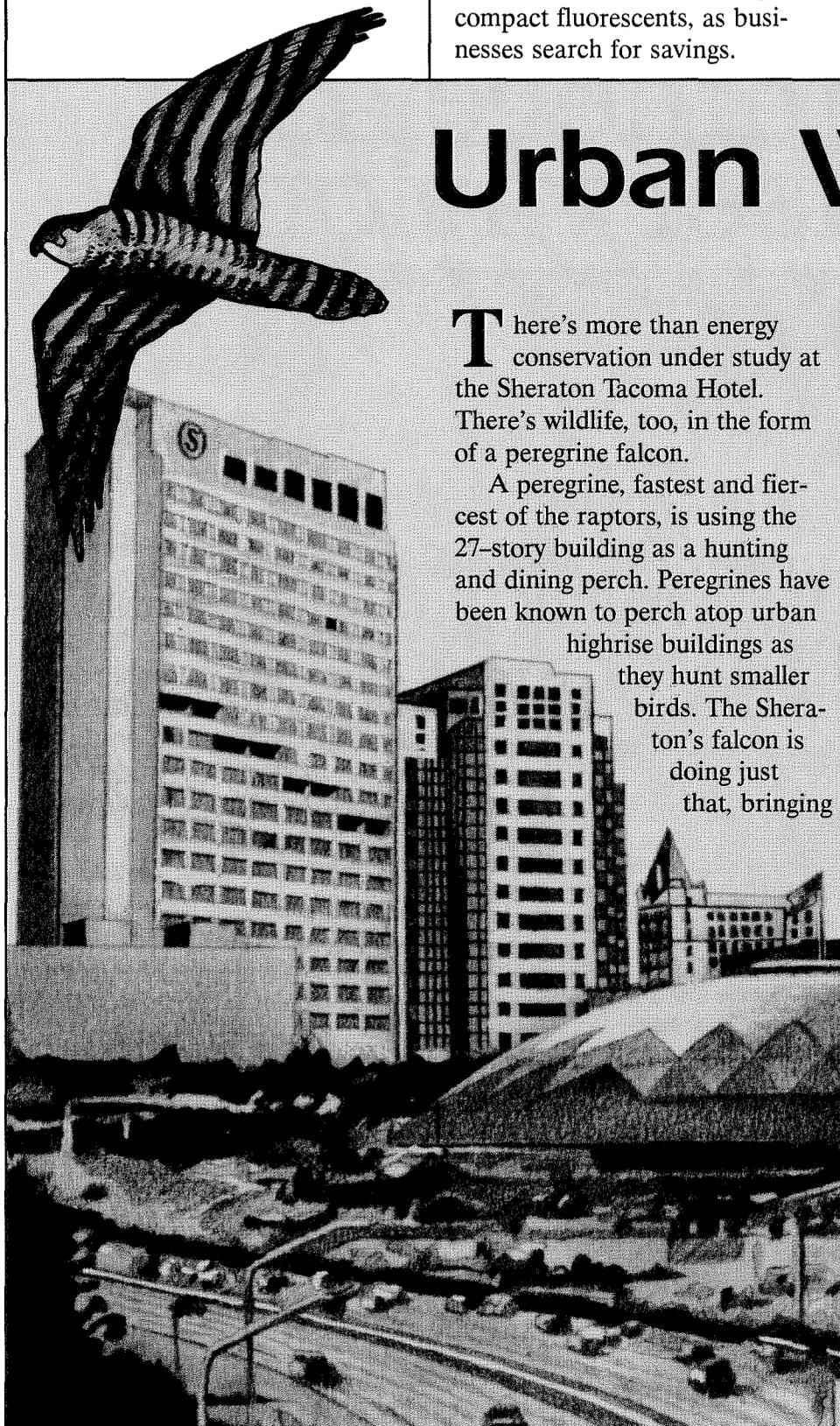
The falcon first appeared at the window ledge, pigeon carcass in tow, in 1989. Washington state wildlife authorities visited periodically after that to watch the bird. Then it was gone for most of the spring and summer of 1990, but returned in late November.

“We’ve found pigeon remains out there, so we know he’s around. But we haven’t seen him again,” said Ken Hanson, chief engineer at the hotel.

That’s probably because the bird has changed its feeding time. Hanson said employees have noticed the remains in the mornings, when the restaurant isn’t open. During lunch and dinner hours, however, the bird apparently is dining elsewhere.

For now.

—JH

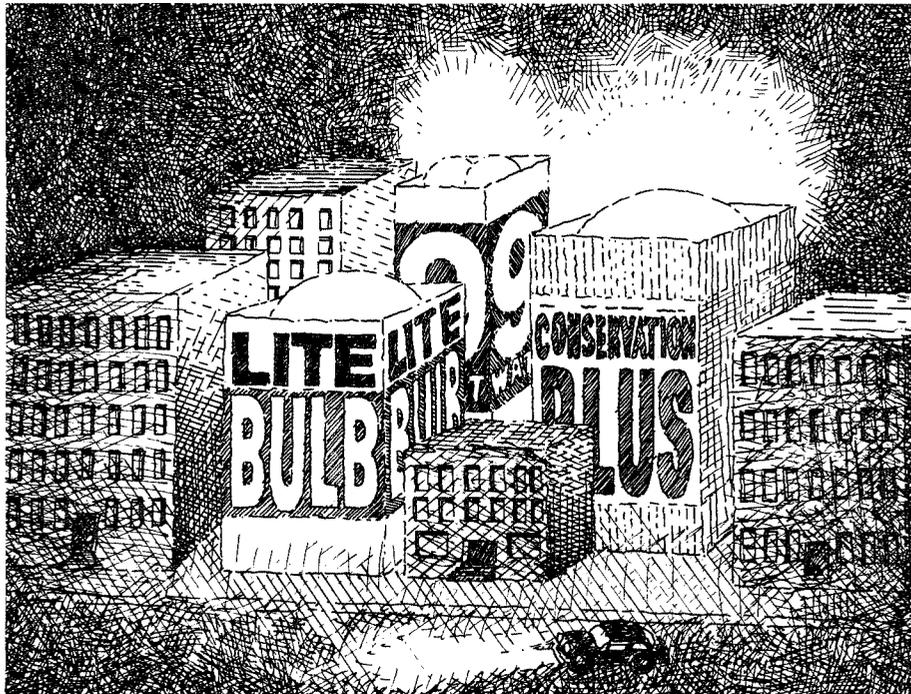


Tapping Commercial Conservation

by John Harrison

In the changing energy climate of the Pacific Northwest, the Bonneville Power Administration is listening to energy conservation ideas and paying for their implementation.

Conservation is widely recognized as the lowest-cost, most environmentally responsible new source of electric energy. With that in mind, Bonneville and Northwest electric utilities are hoping to tap into big savings in commercial buildings, which account for about 22 percent of the electricity consumed in the Northwest.



successful, TAP will be expanded to more sectors than just existing commercial buildings.

“This program shows a big turnaround in the view of how to get conser-

vation,” said Margie Gardner, conservation analyst with the Northwest Power Planning Council. “Bonneville offered commercial conservation programs in the past, but typically they were centrally designed and had little flexibility. Now, utilities can design their own programs, and there’s more chance for everyone to win. Bonneville gets an assurance of

In fact, tap is an appropriate word because Bonneville’s new commercial conservation program is known by its acronym, TAP. The Targeted Acquisition Program evolved from a series of meetings Bonneville conducted with utilities and utility organizations, beginning in 1989. TAP replaces Bonneville’s Commercial Incentives Pilot Program. If

Utilities promoting and Bonneville paying for business efficiency.

savings, and the utilities can tailor the program to fit their own service areas.”

“We were shifting to an acquisition phase in the region, and Bonneville wanted a long-term, stable commercial conservation program,” explained Darryll Olsen, regional planner with the Pacific Northwest Utilities Conference Committee, an organization representing Bonneville’s large customer groups.

“We really look at this as a partnership,” emphasized Sheryl Palmatier, TAP coordinator at Bonneville. “There’s no [set] budget. We’ll buy whatever savings are out there and can be verified.”

Because the program is so flexible, there is a wide range of possible energy-saving approaches. For example, utilities could target lighting, or certain types of buildings with similar energy-efficiency problems.

The financing structure of TAP is new, too. In the past, Bonneville identified the conservation measures it would finance, and

**In its
Draft 1991
Power Plan,
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the Northwest.**

utilities qualified for payment according to which measures were implemented. Under targeted acquisition, utilities propose measures, and Bonneville will pay if the savings can be verified.

In its Draft 1991 Power Plan, the Council identifies as much as 1,550 average megawatts in savings from commercial conservation measures in the Northwest, assuming high electrical load growth during the next 20 years. By way of comparison, the region’s biggest city, Seattle, consumes about 1,000 megawatts.

K.C. Golden, executive director of the Northwest Conservation Act Coalition, described commercial buildings as “the biggest lode in the conservation world.” He said utilities need to take the lead in conservation programs, and he cautioned that “while verification is clearly important, there is a real danger of verifying these programs to death. Bonneville must develop efficient verification procedures that don’t encumber resource developers with unnecessary administrative obstacles.” ■■

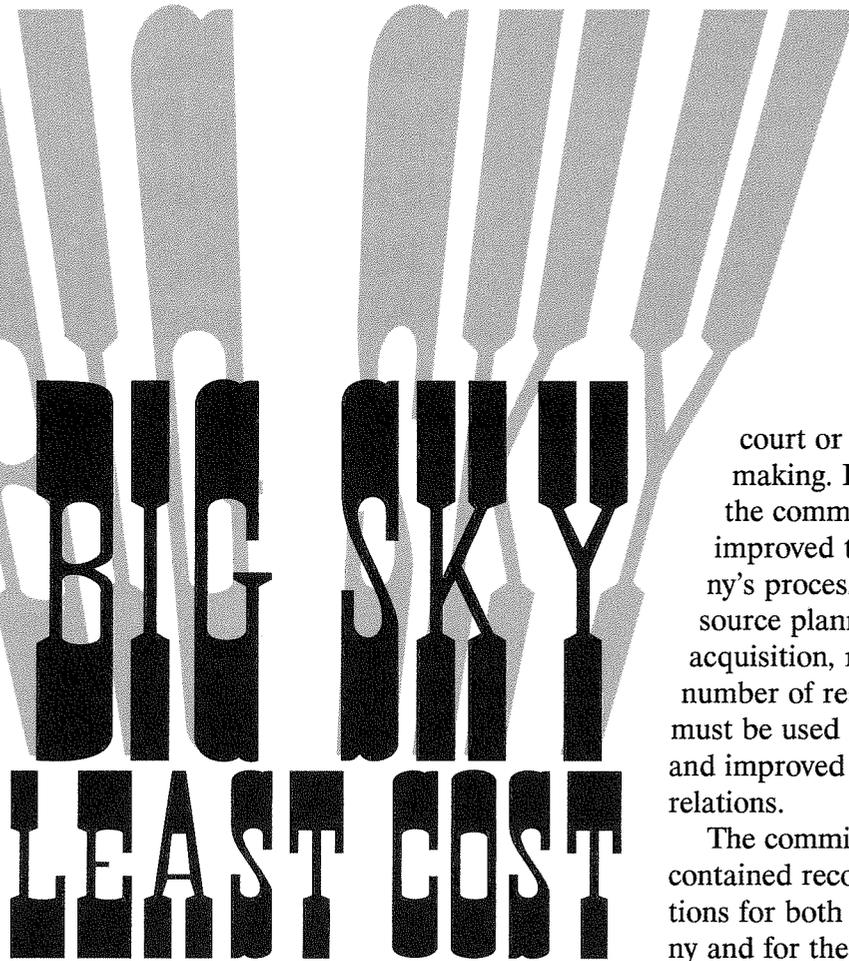


Montana collaborative coaxes utility toward least-cost resources.

by John Hines

Montana Power Company officials and an advisory committee recently reached agreement on a least-cost planning process to guide future energy decisions at the utility. Calling it a "great step into the new era of power planning," Stan Grace, one of Montana's two Northwest Power Planning Council members and chairman of the Council's power committee, applauded the effort, noting that Montana's utilities, unlike those of Idaho, Oregon and Washington, are not required by state regulators to develop least-cost plans.

Montana's planning process also is significant because it was designed cooperatively by the utility, energy experts from outside the company and citizens groups, some of them longtime adversaries of the company. The committee, known formally as the Conservation and Least-Cost Planning Advisory Committee, was formed in October 1988, as part of a settlement between Montana Power and two advocacy groups: Montana's Human Resource Council and the Natural



Resources Defense Council, a national organization.

The groups agreed to not challenge Montana Power's sale of electricity from the company's Colstrip Unit No. 4 coal plant to the Los Angeles Department of Water and Power. In return, Montana Power agreed to expand its conservation programs and establish the advisory committee to make recommendations on future electric power resource acquisitions. The settlement also spelled out tentative conservation expenditures through 1993.

Through its consensus, the advisory committee was able to settle controversial issues and limit future contentious battles in

court or during rate-making. In addition, the committee's work improved the company's process for resource planning and acquisition, reduced the number of resources that must be used in rate cases and improved customer relations.

The committee's report contained recommendations for both the company and for the Montana Public Service Commission, which approves electricity rates in the state. Briefly, the committee recommended:

Resource acquisition rule

This rule would incorporate a number of criteria into resource acquisition decisions to minimize long-term costs to society. The rule seeks to balance factors including risk and uncertainty, service reliability, social and environmental costs, and equitable distribution of costs and benefits.

Such rules, which shape what are called multiple-attribute decisions, also seek to minimize the revenue requirements of the util-

ity. In contrast, single-attribute decision rules focus on one impact, such as only minimizing costs for the utility.

Integrated planning

Conservation and generating resources should be analyzed consistently, equitably and simultaneously. This allows an integrated planning process in which all types of resources compete equally.

Marketing goals

Marketing goals and programs should be evaluated in the context of resource planning. Utility goals sometimes differ from the goals of least-cost planning. Because corporate goals can affect resource choices, they need to be analyzed in terms of least-cost resources.

Resource acquisition

Competitive acquisition should be a component of least-cost planning, not a substitute for it. The company should immediately begin a process to acquire 25 to 50 megawatts and consider all possible resources in the search.

Resource and market barriers

The company should continue to evaluate regulatory and market barriers to least-cost planning and acquisition, including conservation resources. Ideally, regulatory and market factors should enable the company to achieve its greatest profits by following a least-cost planning process.

Montana's utilities, unlike those of Idaho, Oregon and Washington, are not required by state regulators to develop least-cost plans.

Therefore, a broad-based collaborative effort is needed to address regulatory and market hurdles and develop recommendations for rules that encourage least-cost planning by utilities.

The committee made its recommendations to Montana Power officials last October. Presentations also were made to the public service commission, the office of the Montana Consumer Counsel and state energy officials to make the point that utilities need incentives in order to be successful at least-cost planning.

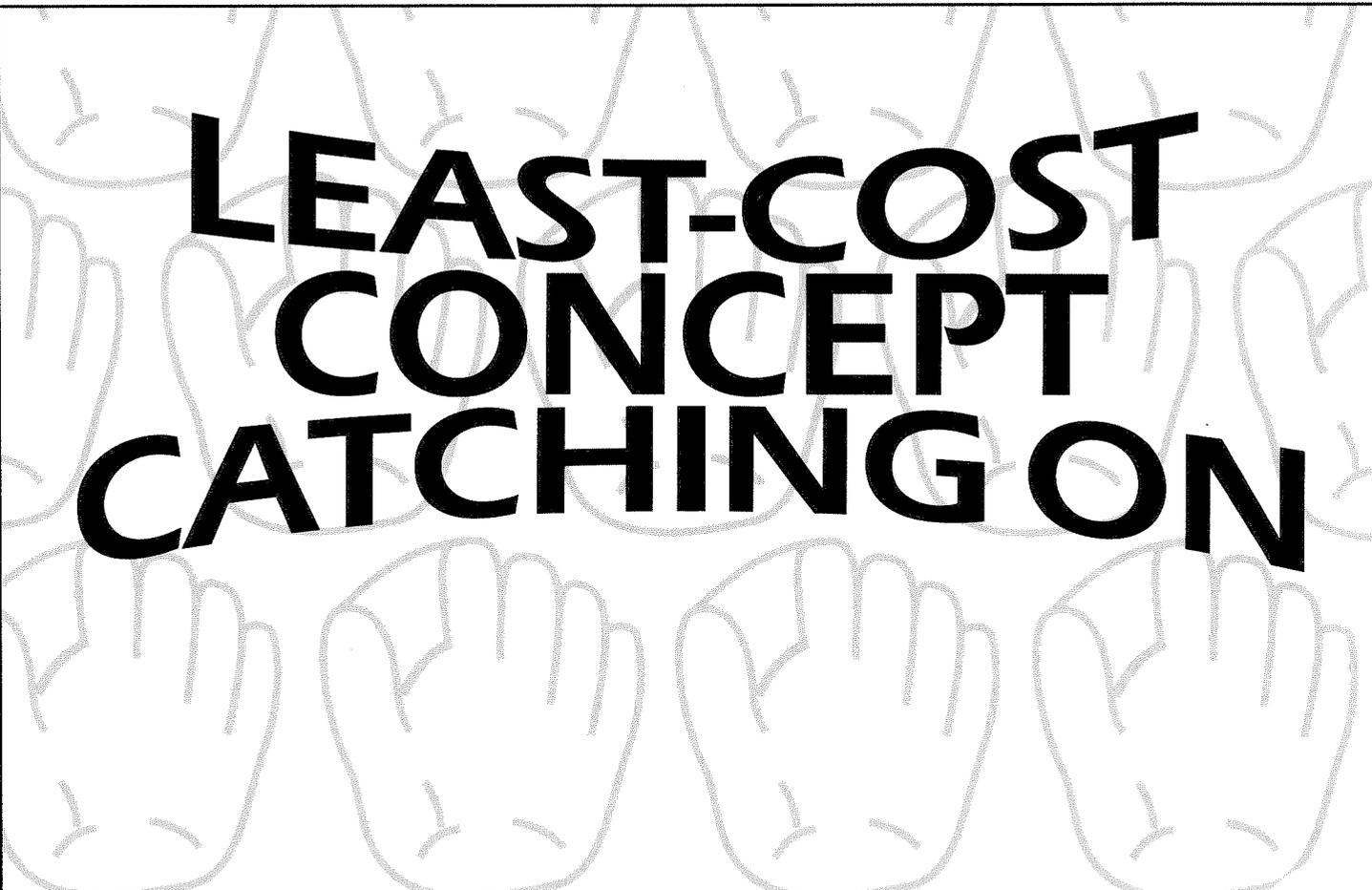
"This report gives us a process for evaluating power supply options and conservation from many points of view; we are ready to see where it goes," said Bob Gannon, Montana Power utility company president.

Montana Power officials are studying the recommendations, which are not binding. Meanwhile, an expanded advisory committee is meeting to address regulatory and market barriers.

The original advisory committee included energy experts from Montana Power and representatives of the Human Resource Council, the Natural Resources Defense Council, the Montana Environmental Information Center, the Northern Plains Resource Council, the Montana Power Company Large Users Group, the Montana Department of Natural Resources and Conservation, and the Northwest Power Planning Council. Gerald Mueller, a former Power Planning Council member from Montana, was the committee's coordinator. ■■

John Hines is an economist with the Northwest Power Planning Council's Montana office and a member of Montana Power Company's Conservation and Least-Cost Planning Advisory Committee.

LEAST-COST CONCEPT CATCHING ON



by Carlotta Collette

Utility resource lists move closer to Council's.

Ten years ago, when the Northwest Power Planning Council introduced the concept of least-cost resource planning for the Pacific Northwest, it was big news in the utility industry. The idea of subjecting all potential sources of electricity, including energy conservation, to the same review—comparing costs to build and operate, environmental ramifications and the relative risks of acquiring too much or too little electricity—was not standard operating procedure anywhere in the United States. The added notion of relying extensively on public input to help design and review resource strategies was particularly unique.

Then the Council urged public utility commissions in the Northwest to require least-cost plans of the power companies each commission oversees. “We could see that Northwest utilities were going to be needing new resources sometime in the near future,” says Idaho Council member Bob Saxvik, “and we were hoping we could get them to take a least-cost and public approach to thinking about their choices. Our regional plan looks at the big picture and is able to see ways various utilities can benefit from cooperation,” he adds. “We can see opportunities that might otherwise fall between the cracks. But their independent plans

could address their specific circumstances. Furthermore, the least-cost planning process channels their thinking along these lines. It gives them ownership of the least-cost concept.”

Now, Idaho, Oregon and Washington public utility commissions require publicly reviewed least-cost plans of the investor-owned utilities they oversee. And, as the accompanying story explains, the Montana Power Company decided to produce one, too. Consequently, all six of the region's private utilities are on board, and all six have concluded that conservation should be the first resource acquired by each of their companies.

“It’s more than a planning exercise,” says Jim Litchfield, the Council’s director of power planning. “Many of these companies will be acquiring resources soon. Their least-cost plans have helped them identify which resources are their best buys. They’ve also pulled together customers who could otherwise have been adversarial and involved them in the planning process.”

Litchfield, whose staff members served on the advisory committees of each of the utilities developing plans, argues that it could have gone differently; any of the utilities could have come up with conclusions that differed from the Council’s. “But there was a high degree of cooperation,” he notes. “Council staff helped with the analysis, tested some of the conclusions, reviewed the plans and provided comment on all of them.”

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When the Pacific Northwest Utilities Conference Committee, which represents major utility and industrial customers of the Bonneville Power Administration, compared all of the utility resource lists to the Council’s draft list of resources for the whole region, there was little discrepancy. This bodes well for the region’s energy future. ■■

Planned Resources Available by 2001

	Sum of Utility Plans	Council Draft Plan
Conservation (by 2000)	1,008	1,090
Cogeneration	655	800
Renewables	72	40 ¹
Hydro	320	350
Hydrofiring ²	623	1,000
System Efficiencies	587 ³	260 ⁴

¹ Scheduled for demonstration. More can be available by 2001.

² Mostly combustion turbines.

³ Transmission, distribution and generation upgrades.

⁴ Transmission, distribution, generation upgrades, changes in system operation.

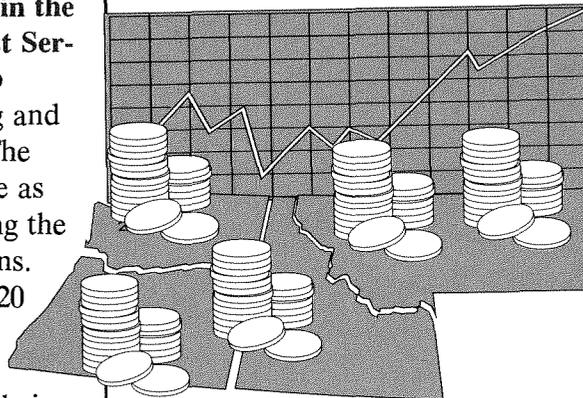
Source: Pacific Northwest Utilities Conference Committee

SHORTS

Under Washington and Oregon's new building codes, the vast majority of new homes will be energy-efficient. Some 87 percent of all new single-family homes and 96 percent of all new multifamily homes in the Northwest will be built to model conservation standards. The standards, developed by the Northwest Power Planning Council, encourage energy-conserving measures. During the next 20 years, assuming high economic growth, the standards should save the region about 800 megawatts, at a cost less than half that of electricity from new generating resources. The new codes generally cut home energy consumption in half. [Source: *Clearing Up*, 11/30/90.]

The number of deep holes in Northwest rivers and streams declined by nearly 60 percent in the last 50 years, the U.S. Forest Service reported recently. Deep holes are the favored resting and rearing habitat of salmon. The Service points to this decline as one of several factors causing the reduction of wild salmon runs. Researchers studied some 220 miles of streams and rivers in five Columbia River subbasins. They compared their findings to records of surveys taken in the same places between 1937 and 1941. Logging and grazing practices are mostly to blame for the loss, the Service concluded. The Service manages more than 50 percent of the spawning habitat in the Pacific Northwest. [Source: U.S. Forest Service.]

The fierce winter storm and cold weather the week before Christmas 1990 set new records for electricity consumption in the Northwest, the Bonneville Power Administration reported. The Bonneville system set a new record of 13,025 megawatts used on December 21. There were minor, localized power outages around the Northwest, but overall, the system held up well. To meet the heavy demand, the U.S. Army Corps of Engineers released water from Dworshak Dam on the Snake River to boost hydropower generation downstream. Combustion turbines, which burn oil or natural gas, were fired up in the Portland and Seattle areas, and all power sales to California were canceled. [Source: (Bonneville Power Administration) *Journal*, January 1991.]



Personal income is growing faster in the Pacific Northwest than in the nation as a whole, according to U.S. Department of Commerce data. That's a reversal of the trend in the early and mid-1980s. [Source: *Marple's Business Newsletter*, 12/5/90.]

OK, bounty hunters, look forward to May, when you can begin earning \$3 for every squawfish you pull from the Columbia River. Squawfish are predators of salmon and steelhead. Last year the Oregon Department of Fish and Wildlife began a reward fishery and tested the fish for possible commercial uses, such as fertilizer or fish sticks. A bounty for squawfish will be offered again this spring and summer. Biologists believe that if 10 percent of the squawfish in the pool behind John Day Dam could be caught each year, nearly 1 million salmon and steelhead smolts could be saved. [Source: *Oregon Wildlife*.]

Prediction: Utilities wouldn't lead the way in power production in 1990, everyone else would. This is according to the Utility Data Institute, which reported that cogenerators, independent power producers and non-regulated utility subsidiaries planned to bring online some 5,997 megawatts of new capacity in 1990, compared to 5,700 megawatts by power companies. [Source: *Energy Conservation Digest*, 12/24/90.]

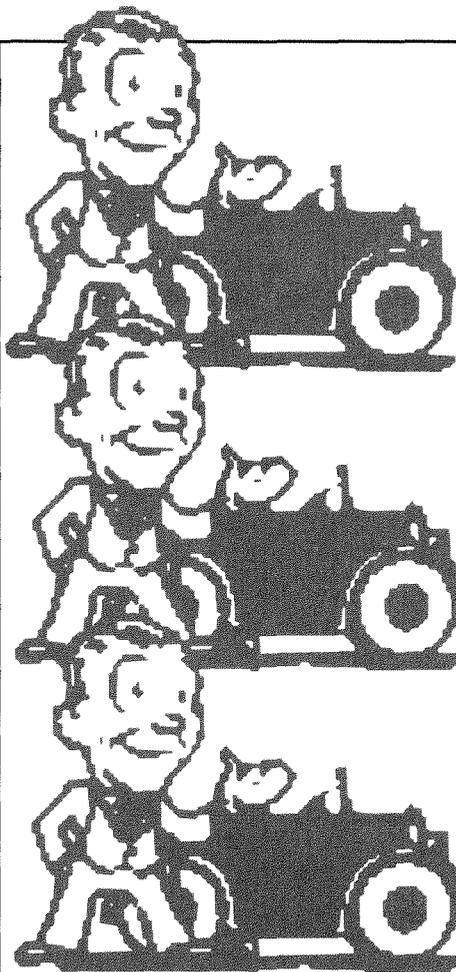
New York is the most energy-efficient state, followed by Arizona, Vermont, California and Colorado, according to a recently completed study by Public Citizen, a public interest research group. The five most energy wasteful states are Texas, Wyoming, Alaska, Kansas and Louisiana. Another conclusion of the study: If the 23 states using energy at a rate above the national average

reduced their use to the national average, energy consumption in the United States would be cut by 12 percent. [Source: *Energy Conservation Digest*, 11/12/90.]

Portland and the state of Oregon are converting vehicles they operate to run on natural gas. The city and state made the move to improve air quality in the Portland area. Gasoline will remain as a back-up fuel. Ultimately, the state hopes to convert all 502 vehicles it operates in the Portland area to these dual-fuel systems. The city of Cannon Beach, Oregon, also is converting its fleet of vehicles to dual-fuel systems. [Source: *Oregon Energy Report*, October 1990.]

The federal Department of Energy recently completed a test run of a new coal technology. The magnetohydrodynamics (MHD) process burns coal at extremely high temperatures (4,800 degrees Fahrenheit) to create an electrically conducting gas called a plasma. This plasma is treated with potassium to enhance its conductivity and then shot through a magnetic field at a velocity near the speed of sound to create electricity. Magnetohydrodynamics uses less coal than conventional coal technologies and produces fewer pollutants. [Source: *Western Energy Update*, 12/17/90.]

Sweden began taxing emissions of sulfur and carbon dioxide this year, and will begin taxing emissions of nitrous oxide in 1992. The tax is an effort to lower emissions from power plants and applies to most power plants over 10 megawatts in size. [Source: McCarthy Information, Ltd.]



The power of ocean waves will supply all the electricity used by the small island of Islay on the Atlantic coast of Ireland. The electricity will come from a small power plant developed by engineers from Queens University in Belfast. The plant, located in a wave-washed gully, will produce an average of 40 kilowatts a day, enough for the small community. Recently, the European Community Commission included wave power among alternative energy sources that will be researched in 1991. [Source: *The New York Times*.]

Conservation and renewable resources won the backing of the California Energy Commission in a recent study. The Commission studied various energy resources, weighing the hidden costs of pollution, energy security and waste

disposal. Even with price weighted five times higher than other considerations, renewable energy and energy efficiency cost society a fraction of other resources, the study concluded. [Source: California Energy Commission.]

One-third of the persons questioned in a nationwide survey last August said they had done nothing to decrease energy use. Nonetheless, recent surveys show general support for conservation, with an average of 90 percent saying the United States should adopt a national energy policy to encourage conservation. [Source: John M. Berry, associate director of the Roper Center for Public Opinion Research at the University of Connecticut, quoted in *The Christian Science Monitor*, 11/30/90.]

1990 was Earth's warmest year in recorded history, scientists from the United States and England announced recently. In addition, the decade of the 1980s was about one-third degree warmer than the planet's average temperature for the previous 30 years, the scientists reported. The figures, which support theories of global warming, were released jointly by the Goddard Institute for Space Studies, a division of the National Aeronautics and Space Administration, and the British Meteorological Office. [Source: *The Oregonian*, Portland, Oregon.]

—Compiled by John Harrison

CALENDAR

March 11-15—"Affordable Comfort Conference V" in Philadelphia, Pennsylvania.

Sponsored by the Citizens Coalition for Energy Efficiency and the Pennsylvania Energy Office. For more information: Linda Knapp, Citizens Coalition for Energy Efficiency, 100 N. 17th Street, Third Floor, Philadelphia, Pennsylvania 19103, 215-563-3761.

March 13-14—Northwest Power Planning Council meeting at the Village Red Lion Inn in Missoula, Montana.

March 18-21—"National Bioenergy Conference" at the Coeur d'Alene Resort in Coeur d'Alene, Idaho. Sponsored by the University of Idaho, Pacific Northwest and Alaska Bioenergy Program (Bonneville Power Administration) and the Idaho Department of Water Resources. For more information: Richard L. Folk, University of Idaho, College of Forestry, Department of Forest Products, Moscow, Idaho 83843, 208-885-5850.

March 22-27—"56th North American Wildlife and Natural Resources Conference" at the Edmonton Convention Center in Edmonton, Alberta, Canada. Sponsored by the Wildlife Management Institute. For more information: L.L. Williamson, Wildlife Management Institute, 1101 - 14th Street, N.W., Suite 725, Washington, D.C. 20005, 202-371-1808.

April 2-5—"A New Decade of Progress—The 1991 International Symposium on Radon and Radon Reduction Technol-

ogy" in Philadelphia, Pennsylvania. Sponsored by U.S. Environmental Protection Agency and the Conference of Radiation Control Program Directors. For more information: CRCPD, 205 Capitol Avenue, Frankfort, Kentucky 40601, FAX 502-227-7862.

April 14-17—"Info '91" at the Westin Hotel in Chicago, Illinois. Sponsored by the U.S. Council for Energy Awareness. For more information: U.S. Council for Energy Awareness, Conference Registrar, 1776 "I" Street, N.W., Suite 400, Washington, D.C. 20006-2495, 202-293-0770, FAX 202-785-4113.

April 10-11—Northwest Power Planning Council meeting in Oregon.

April 22-23—"Demand-Side Management and the Global Environment" at the Hyatt Regency in Arlington, Virginia. Sponsored by the Alliance to Save Energy, the American Council for an Energy Efficient Economy, the Electric Power Research Institute, Edison Electric Institute and the Environmental Protection Agency. For more information: Elliot Boardman, Synergic Resources Corporation, 111 Presidential Blvd., Suite 127, Bala Cynwyd, Pennsylvania 19004, 215-667-2160.

April 24-25—"Washington Energy Management Conference" at Yakima's Town Plaza and Conference Center in Yakima, Washington. For more information: Diane Paddock, Washington State Energy Office, 809 Legion Way, S.E., Olym-

pia, Washington 98504, 206-956-2097.

May 8-9—Northwest Power Planning Council meeting at the Red Lion Downtowner in Boise, Idaho.

May 8-11—"Responsive Energy Technology Symposium and International Exhibition (RETSIE) '91" at the Marriott Hotel and Marina in San Diego, California. Sponsored by the U.S. Department of Energy, the California Energy Commission, and others. For more information: Connie Wheaton, RETSIE '91, San Diego Gas and Electric, P.O. Box 1831, San Diego, California 92112, 619-696-4615, FAX 619-233-5701.

June 12-13—Northwest Power Planning Council meeting at the Sheraton Tacoma Hotel in Tacoma, Washington.

June 17-20—"International Symposium on Biological Interactions of Enhanced and Wild Salmonids" at the Coast Bastion Inn in Nanaimo, British Columbia, Canada. Sponsored by the Department of Fisheries and Oceans. For more information: Ann Thompson, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, British Columbia, Canada V9R 5K6, 604-756-7260, FAX 604-756-7053.

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

—Compiled by Judy A. Gibson

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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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Art Director: Stephen Sasser
Production: Judy Gibson

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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

- 90-18 Draft 1991 Northwest Power Plan—Volume I
- 90-18A Draft 1991 Northwest Power Plan—Volume II (complete set or by individual group below)
- Group 1:** (60 pages) Chapter 1: Recommended Activities for Implementation of the Power Plan; Chapter 11: Resource Acquisition Process.
- Group 2:** (80 pages) Chapter 2: Background and History of the Northwest Power System; Chapter 3: The Council's Planning Strategy; Chapter 4: The Existing Regional Electric Power System.
- Group 3:** (210 pages) Chapter 5: Economic Forecasts for the Pacific Northwest; Chapter 6: Forecast of Electricity Use in the Pacific Northwest.
- Group 4:** (190 pages) Chapter 7: Conservation Resources; Chapter 12: Model Conservation Standards and Surcharge Methodology.
- Group 5:** (360 pages) Chapter 8: Generating Resources; Chapter 9: Accounting for Environmental Effects in Resource Planning; Chapter 16: Confirmation Agendas for Geothermal, Ocean, Wind and Solar Resources.
- Group 6:** (120 pages) Chapter 10: Resource Portfolio; Chapter 13: Financial Assumptions; Chapter 14: Resource Cost-Effectiveness; Chapter 15: Risk Assessment and Decision Analysis.
- 1986 Northwest Power Plan
- 1987 Columbia River Basin Fish and Wildlife Program
- 10th Annual Report of the Northwest Power Planning Council
- 90-12 Draft Columbia Basin Salmon and Steelhead Integrated System Plan

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, deadlines for public comment and a more detailed publications list)

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City/State/Zip _____

(Or call Judi Hertz 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.)

Journey of the Kings (revised December 1990)

Journey of the Kings is a beautiful, half-hour video about the plight of Columbia River salmon and the remarkable regional program designed to protect them. The video soars over and dives into some of the Northwest's most breathtaking environments as it follows the migrating salmon from their freshwater birthing streams to the Pacific Ocean and back again.

The video is available free. Contact Judy Gibson in the Council's public involvement division at the phone numbers or address above.

IN THIS ISSUE

A QUESTION OF EMPHASIS



**BIG SKY
LEAST COST**

**JIMMI
GOLLIER**