

Northwest Power and Conservation Council

STRIKING A BALANCE BETWEEN ENERGY AND THE ENVIRONMENT IN THE COLUMBIA RIVER BASIN

SOCKEYE SALMON RUN IS THE LARGEST IN DECADES: SPAWNERS RELEASED INTO REDFISH LAKE

2008



is a phenomenal year for sockeye salmon in the Columbia River Basin. By

the first week of September, more than 213,500 adult sockeye had been counted crossing Bonneville Dam on their way to spawn in Idaho, north-central Washington, and British Columbia. The run is the largest since the 1960s and nearly four times the average for the last 10 years at Bonneville, which is 58,551 fish. In 2007, the sockeye count at Bonneville was 24,372.

But the biggest news for sockeye this year is the return up the Snake River. By the first week of September, 890 fish had been counted crossing Lower Granite Dam on their way to spawn in the Salmon River headwaters lakes of central Idaho. That is nearly 20 times the average return of the last ten years, which was just 42 fish. In 2007, 53 sockeye were counted at Lower Granite.

The big return this year likely has a combination of causes including good ocean conditions, favorable inriver conditions in 2006 when the fish migrated to the ocean as juveniles, and improved passage conditions at Snake and Columbia river dams for both juvenile and adult salmon. Sockeye that return to spawn in Redfish Lake are collected for a captive-breeding program at the Eagle, Idaho, hatchery of the Idaho Department of Fish and Game. Captive breeding helps preserve the Snake River sockeye gene pool.



Left to right: Council Member Dick Wallace (with cap), Council Chairman Bill Booth, Idaho Governor Butch Otter (in black hat) and First Lady Lori Otter, work to release sockeye spawnners at Redfish Lake, 900 miles from the mouth of the Columbia River.

This year, 557 sockeye were collected at the lake, 900 miles from the mouth of the Columbia River. Each year after the returning fish are collected, adult and juvenile sockeye from the breeding program are released by the Department of Fish and Game into the lake to spawn. This year, 56 adult fish were released in a ceremony on September 2 attended by Governor C.L. "Butch" Otter and representatives of the Shoshone-Bannock Tribes, the Fish and Game Department, Bonneville Power Administration, NOAA Fisheries, and the Northwest Power and Conservation Council. The agencies collaborate on the effort to rescue and rebuild the Endangered Species Act-listed sockeye. (See *Sockeye Salmon* on page 3)

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Council Seeks Public Comments On Draft 2008 Fish and Wildlife Program



In August, the Council released for public comment its Draft 2008 Columbia River Basin Fish and Wildlife Program, the first revision of the program since 2004-05 when the Council added 65 management plans for tributary subbasins and mainstem river reaches.

The current amendment process began in November 2007 when the Council called for recommendations from the region's fish and wildlife agencies and Columbia River Basin Indian tribes. A total of 65 recommendations were received, and these were made available for public comment. Using the recommendations as a foundation, and informed by the comments, the Council and its staff developed the Draft 2008 Program.

Key themes of the draft program include:

- Emphasizing implementation of fish and wildlife projects based on needs identified in subbasin plans and also on actions described in federal biological opinions on hydropower operations, hatcheries, and harvest and the 2008 Fish Accords signed by federal agencies, Indian tribes, and the states of Idaho and Montana.
- Continuing the Council's commitment to independent scientific review of all projects proposed for funding through the program, including those actions described in the biological opinions and Fish Accords.
- Focusing on protecting and restoring habitat in order to rebuild healthy, naturally producing fish and wildlife populations. The program also calls for further review of specific issues such as the impacts of global climate change, toxic substances, and invasive species on fish, wildlife, and habitat.

Since 2000, the program's goals, objectives, scientific foundation, and actions have been organized in a framework to establish an integrated approach to regional fish and wildlife mitigation and recovery. The framework allows the Council to bring together, as closely as possible, Endangered Species Act requirements, the broader requirements of the Northwest Power Act, and policies of the states and Indian tribes into a comprehensive program with a solid scientific foundation.

As with the last version of the program, the 2008 draft is organized in three levels: 1) a basinwide level; 2) an ecological province level that divides the Columbia River Basin into 11 unique ecological areas; and 3) a subbasin level, with integrated plans that contain specific objectives and measures, as well as a special plan for the mainstem Columbia and Snake rivers and a plan for the Columbia River estuary.

(See Draft Fish and Wildlife Program on page 14)



Notes From the Chair

This fall, as our lead story describes, I had the pleasure of releasing sockeye salmon into Redfish Lake in a ceremony to celebrate the largest sockeye run since the 1960s. By early September, more than 200,000 adult sockeye had been counted at Bonneville Dam. The fish are part of a captive-breeding program, funded through the Council's Columbia River Basin Fish and Wildlife Program, and it represents the successful collaboration between many entities.

For more background on the Council's fish and wildlife program, stories in this issue also cover the release of the draft program, which is mandated by the Northwest Power Act to mitigate the effects of dams on all fish and wildlife. A related story explains how the program works with the Endangered Species Act to ensure that both laws are met.

In an interview with green building advocate Theddi Wright Chappell, we are asked to consider, what is the true value of a building? How do you value a building's sustainable features? We learn about the market forces at work, and what she is doing to expand our ideas of "value."

Finally, consider the possibility of using the heat that builds up in asphalt during the day to generate electricity--a serendipitous pairing of pavement and solar energy. It's a research project that brings new meaning to the phrase, "hit the road."



Sockeye Salmon Run Is The Largest In Decades: Spawners Released Into Redfish Lake *(continued from page one)*

"This morning we put some red back in Redfish Lake," said Fish and Game Director Cal Groen at a ceremony at the Department's Eagle Hatchery later that day. "These fish are so special. They are part of the landscape."

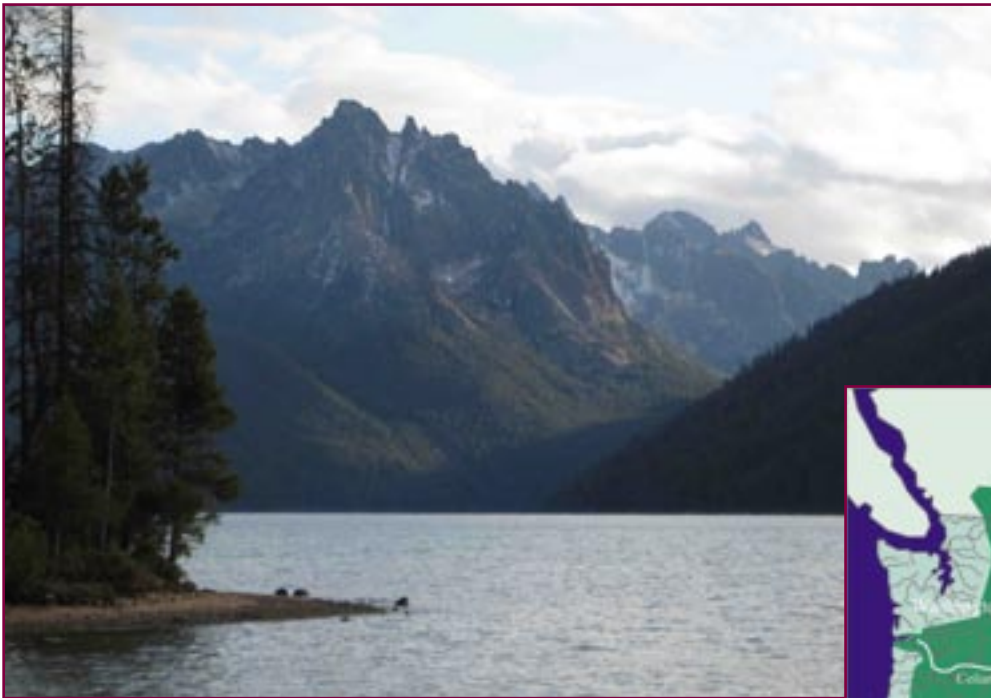
Groen spoke at the dedication of a new sockeye broodstock facility at the Eagle, Idaho, hatchery. According to a Fish and Game news release, the new

facility doubles the hatchery's capacity to maintain adult sockeye broodstock and triples the hatchery's ability to produce sockeye eggs.

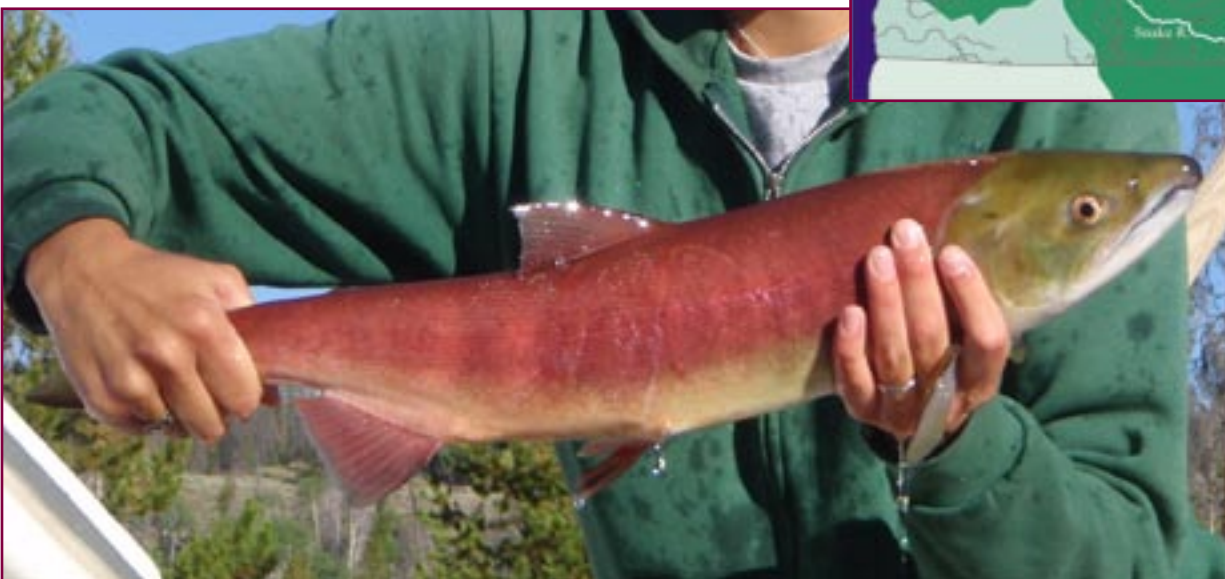
"This is a safety net," Governor Otter commented. "This is an example of the untold good we can accomplish if we come together and set aside our biases and prejudices."

The nearly \$4 million building was funded by the Bonneville Power Administration through the Power and Conservation Council's Columbia River Basin Fish and Wildlife Program.

The sockeye captive breeding program began in May 1991. Later that year, in November, the species was listed as endangered under the Endangered Species Act. CQ



Redfish Lake and the Sawtooth Mountains.



This male sockeye was captured at the Sawtooth Fish Hatchery near Redfish Lake as it returned from the ocean to spawn.

TOUR FOR CONGRESSIONAL STAFF ADDRESSES COLUMBIA RIVER FISH, WILDLIFE, ENERGY ISSUES


In August, eight Congressional staff members participated in an informational tour hosted by the Northwest Power and Conservation Council to learn about fish, wildlife, and energy issues in the Columbia River Basin.

The staff members represented the offices of Congressman David Wu and Senator Ron Wyden of Oregon; Congressman Jay Inslee and Senator Patty Murray of Washington; Senator Larry Craig of Idaho; the House Subcommittee on Water and Power of the Committee on Resources; the Office of Budget Analysis and Coordination of the federal Department of Energy; and the National Relations Office of the Bonneville Power Administration.

The two-day tour included presentations by Council staff on the Northwest Power Act of 1980, the law that authorized the four Northwest states to form

the Council; Columbia River basin hydro-system operations; energy conservation, and fish, wildlife, and energy issues specific to the upper Columbia River Basin in Northeastern Washington, Northern Idaho, and Western Montana. The group toured a new, energy-efficient high-rise building that is part of the south waterfront development of the Oregon Health Sciences University in Portland.

The group also toured Bonneville Dam, including the juvenile and adult fish passage facilities and learned about efforts to reduce predation on adult salmon and steelhead by sea lions, and later met with representatives of the

Yakama Nation at Lyle Falls near the mouth of the Klickitat River in the Columbia River Gorge for briefings on tribal harvest of salmon, fish passage, and other issues. Finally the group viewed the Sandy River delta area near its confluence with the Columbia for a discussion of wildlife habitat restoration as part of the Council's and Bonneville's efforts to mitigate the impacts of hydropower dams on fish and wildlife. 



Caption needed here.

A Medical Facility Built With the Health of the Environment in Mind, Too

On the agenda for congressional representatives visiting Portland to learn more about Columbia River Basin issues was a tour of the Oregon Health and Science University's Center for Health and Healing. The building is located in the South Waterfront Central District and anchors the university's presence in an underused area in the heart of the city. In many ways, it represents the intersection between OHSU's expansion and Portland's vision to transform an industrial patch of land into a vibrant new neighborhood.

Since its opening in 2006, the building has received a number of accolades for its state-of-the-art sustainable design. The 16-story, 400,000 square-foot center is the first large medical and research facility in the United States to have earned LEED (Leadership in Energy and Environmental Design) platinum certification--the highest attainable--from the U.S. Green Building Council, which sets the standards for green building. Only 30 buildings across the nation have this distinction. It has also received the city of Portland's Businesses for an Environmentally Sustainable Tomorrow (BEST) Award in Green Building.

The center includes physician offices, outpatient surgery, a wellness center, research labs, and educational space.

"Cost is often seen as a barrier to sustainable building," said David Crawford, chief financial officer for the OHSU Medical Group. "The Center for Health and Healing is a super green building delivered within a conventional building budget." The OHSU Medical Group, composed of OHSU School of Medicine faculty physicians, carries out the university's clinical mission and is OHSU's partner in developing the building.



Oregon Health and Science University's Center for Health and Healing in Portland.

The \$145 million building's green design and engineering is innovative enough to have prompted the project's engineering firm to publish a guide for others hoping to achieve a top-rated green building on a conventional budget.

Significant energy and water savings have been integrated into a design that emphasizes efficiency and nature's systems. In contrast to conventional building designs that seek to seal nature out and then rely heavily on mechanical assistance, this building's design and engineering team have harvested natural resources.

Rainwater that falls on the building is reused in toilets and landscaping, and daylight is fully used for lighting. The sun's energy is captured both through a "Trombe wall" solar collector and photovoltaic cells located on south façade sunscreens.

The building's innovative energy-saving features include a range of passive and active systems such as the first large-scale, on-site micro-turbine plant in Oregon that will generate about 35 percent of the building's electricity; natural ventilation; displacement ventilation; radiant cooling; and the first use of chilled beams to replace air-conditioning in a large building in the United States.

Eco-roofs on terraces, water-efficient fixtures and appliances, and the use of sustainable and regional materials in construction round out the building's environment-friendly features.

Other notable savings from the building's design are:

- 61 percent more energy-efficient than required by Oregon code and

LEED standards

- 56 percent less potable water use than a comparable conventional building
- 100 percent on-site sewage treatment, reducing by 15,000 gallons each day the amount of water that reaches the city's combined sewer system. The system will flush about 1 percent of the solids that would normally be sent into the city sewer system from a conventional building

Key team members, in addition to OHSU and the OHSU Medical Group, included Gerding Edlen Development, the development managers; GBD Architects and Interface Engineering, Inc., who were responsible for the design of the building and its mechanical, electrical, and plumbing systems; Walker Macy, the landscape designers; Hoffman Construction Co., who built it; and Brightworks, the sustainability advisors who coordinated the green building strategies. CQ

Western Region Works to Reduce Greenhouse Gas Emissions

Like many other parts of the country, Western states are joining forces to address climate change. In 2007, the governors of Arizona, California, New Mexico, Oregon, and Washington announced the formation of the Western Regional Climate Action Initiative (WCI) to develop regional strategies to reduce greenhouse gas emissions. The Intergovernmental Panel on Climate Change, created by the United Nations in 1988 to track research on global warming, has connected greenhouse gases to rising temperatures. Since its inception, Montana, Utah, British Columbia, Manitoba, and Quebec have also signed on. Ontario, Canada's most populous province, and Saskatchewan have observer status, as do Alaska, Colorado, Idaho, Kansas, Nevada, and Wyoming, and several Mexican states. The initiative builds on existing reduction efforts in the individual states, as well as two existing regional efforts.

At the Northwest Power and Conservation Council's July meeting, Janice Adair, chair of the WCI, briefed Council members on their goals. Early last year, the WCI set a regional, economy-wide target to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. To achieve this, the group is designing a cap and trade market. Such markets allow major polluters to comply with caps on their emissions by purchasing offsetting credits from sellers who have not used their total emission allowance.

WCI partners are focusing on developing a regional program that builds on the strength of consistent local approaches, while understanding that each partner must have flexibility to implement the program in a way that addresses their jurisdiction's unique characteristics.

Partners also want the program to promote clean and renewable energy in the region, stimulate economic investment and new jobs, and reward innovations

The draft design recommendations are available for review at www.westernclimateinitiative.org; work to refine the design is expected to continue until the end of the year.



Central Oregon forest photograph from The Governor's Climate Change Integration Group, State of Oregon.

Partners also want the program to promote clean and renewable energy in the region . . .

The workplan for the coming year calls for work on the model rules and other implementation issues and continued efforts on policies of common interest.



Also at the same meeting, representatives of Seattle City Light, Snohomish County PUD, and Grant County PUD offered the perspective from public power utilities. All three noted that their utility expected to meet their state's renewable portfolio standard requirements.

Miles of Megawatts: From Pavement to Solar Generation

As any child knows, walking barefoot across a parking lot on a hot summer day is a scorching experience. Now researchers at Worcester Polytechnic Institute have found a way to use asphalt's heat-absorbing property as a potential energy source.

Researchers are developing a solar collector that could turn roads and parking lots into inexpensive sources of electricity and hot water. The U.S. highway system alone is over 40,000 miles long, providing an extensive infrastructure of asphalt. The project is looking not lonely at how well asphalt can collect solar energy, but the best way to construct roads and parking lots to maximize their heat-absorbing qualities.


"Asphalt has a lot of advantages as a solar collector," says Rajib Mallick, associate professor of civil and environmental engineering and project director. "For one, blacktop stays hot and could continue to generate energy after the sun goes down, unlike traditional solar-electric cells. In addition, there is already a massive acreage of installed roads and parking lots that could be retrofitted for energy generation, so there is no need to find additional land for solar farms. Roads and lots are typically resurfaced every 10 to 12 years, and the retrofit could be built into that cycle. Extracting heat from asphalt could cool it, reducing the 'urban heat island' effect. Finally, unlike roof-top solar arrays, which some find unattractive, the solar collectors in roads and parking lots would be invisible."

Mallick and his research team studied the energy-generating potential of asphalt using computer models and by conducting small- and large-scale tests. The tests were conducted on slabs of asphalt imbedded with thermocouples to measure heat penetration, and copper pipes to gauge how well heat could be



transferred to flowing water. Hot water flowing from an asphalt energy system could be used as is for heating buildings, in industrial processes, or it could be passed through a thermoelectric generator to produce electricity.

In the lab, small slabs were exposed to halogen lamps, simulating sunlight. Larger slabs were set up outdoors and exposed to more realistic environmental conditions. The tests showed that asphalt absorbs a considerable amount of heat, and that the highest temperatures are found a few centimeters below the surface. This is where a heat exchanger would be located to extract the maximum amount of energy. Experimenting with various asphalt compositions, they found that the addition of highly conductive aggregates, like quartzite, can significantly increase heat absorption, as can the application of a special paint that reduced reflection.

The key to successfully turning asphalt into an effective energy generator is replacing the copper pipes used in the tests with a specially designed, highly efficient heat exchanger that soaks up the maximum amount of heat absorbed by asphalt. It may be, says Mallick, that a very important future source of renewable, pollution-free energy for our nation has been there all along, right under our feet. 



NORTHWEST Q&A: THEDDI WRIGHT CHAPPELL AND VALUING SUSTAINABLE BUILDING

Theddi Wright Chappell is the managing director for Cushman & Wakefield's National Green Building and Sustainability Practice and Valuation Services team in Seattle, Washington. Chappell specializes in analyzing the potential value of sustainable development, focusing on identifying and analyzing the costs and benefits of sustainable properties across the U.S.

Prior to joining Cushman & Wakefield, Chappell served as CEO of Beaverton, Oregon-based Sustainable Values, Inc. There, she provided consulting services in valuation and investment analysis, market analysis, the feasibility of urban redevelopment projects, and objective assessments of the potential of sustainable development to affect value.

In addition to her position at Cushman & Wakefield, Chappell serves as the ambassador of sustainable initiatives for the Appraisal Institute and was chosen by the institute to assist in the development of a national "Certificate of Sustainability" in collaboration with the U.S. Green Building Council and the Environmental Protection Agency. The goal of the certification program is to achieve expertise in the valuation of sustainable properties.

Tell me about the work that you're doing to promote sustainability?

What we're trying to do, what my goal has been for the last several years, is to identify and then quantify the benefits of sustainable development—energy efficiency, energy strategies, as well as other sustainable strategies relative to real estate asset value. I work with the Appraisal Institute as their



ambassador of sustainable initiatives and co-authored a one-day seminar titled "An Introduction to Valuing Green Building." And what that focuses on is raising awareness in the appraisal community, which hopefully will transfer to the underwriting and investment community, an understanding of what sustainable development is, what the differences between that type of an approach and traditional development approaches or redevelopment approaches would be, and quantifying any variation or differential in market value as a result of adopting these principles or practices.

Are the people you're talking to receptive, are they interested in being able to do that?

I think the market is very interested in this. The investment world here is pretty bottom line oriented. They're very focused on the economic benefits, not maybe quite so much the triple bottom

line, the environmental and social benefits that perhaps you see more of in the U.K., Canada, or Australia. That being said, I think I hear more and more discussion from international investors or groups, such as Reef, such as Kennedy, such as MEPT, some of the larger funds that have adopted the U.N.'s principles for responsible investing, and those include consideration of not just economics, but also environmental, social, and security considerations. So, larger investors are looking at these factors; still, with a focus on what's the bottom line, is it financially feasible, what's the cost-benefit analysis for these types of things. But, I'm hearing more about a greater focus on these issues and more attempts to incorporate those types of considerations into investment decisions.

How do you get to the hard numbers, how do you get to quantifying it?

Obviously, energy is one of the most tangible ways; I refer to it as the low-hanging fruit of these sustainable initiatives because it's more easily quantified. You can quantify kilowatt savings, you can quantify cost savings. Measuring those types of savings is easier with energy than with some of the other factors such as worker productivity. But there are ways beyond just energy, things to look for in terms of maintenance, operating expenses, in terms of improvement costs, the types of tenant improvements that are done and are they more flexible, do they take more or less time to complete, down time between leases. If in fact there is greater tenant satisfaction, does that mean they will stay in one place longer, and are they more likely to renew their lease. So going through the same questions you

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would ask with a traditional property, but being sensitive to some of the reasoning that goes into a tenant’s decision-making. I know of certain instances where tenants have moved to a building specifically because they wanted to be in a sustainable building and they were very interested in better air quality. That’s something that’s unique to that type of property. From a marketability standpoint, does that mean they could lease it more quickly? Are they going to get top of the market rent or competitive rents? Really identify the differences, and then seeing if and how those could be quantified.

It seems that with the focus on high energy costs today, the environment would be favorable to that kind of marketing.

I think for new construction, particularly in the Northwest, people would really wonder why you wouldn’t adopt energy-efficient strategies. We can’t control the cost of a barrel of oil, but we can control the consumption. We can take steps to be more strategic in how a building is built and its quality. What kind of HVAC does it have? Is it high performing? Are we right-sizing the equipment so that it will be more efficient? Those are strategies where we do have examples, proven track records of success. So in a way, I’ve been told by people who have been involved in sustainable building for many more years than I, that it’s just good building practices, it’s just best practices relative to development and redevelopment. So it’s a focus on quality and a focus on performance. It’s just that historically, from a valuation or say investment perspective, how the building was put together wasn’t recognized as something that could actually impact the bottom line. It was a class A building,

but that meant it had granite and it had this and that, which was more aesthetic than functional. Now I think the functionality and the performance is getting much more factored into the decisions that are made, and also into the market appeal. The harder question is existing buildings and what do you do with those.

Do you find the Northwest region is a little more forward-thinking than other parts of the country or are there other regions that are ahead of us?

I think for the Northwest sustainability is certainly part of the fabric of our existence. And I think as opposed to forward thinking I would use awareness. We in the Northwest are very aware of this type of development. There are pockets—obviously San Francisco, certain areas in the Southeast, New Jersey, Chicago, Denver—there are different cities where the municipality has actually made moves to create incentives for developers to develop or redevelop. In Oregon, there are the credits that encourage people to be more energy-efficient. I think that kind of carrot is what the architectural community would like to see before the sticks of regulation that are being implemented in California. I think we’ll see a combination of both going forward, but I think there is greater and greater acceptance at higher levels. Also, from a tenant’s perspective, we’re seeing many more discussions about corporations being aware of this because they want to attract really good talent, and younger generations are really interested in their work environment. There are a lot of factors that inevitably lead to economics, but along the way they include a lot of other considerations.

It seems to cover a broad range of things, starting with energy-efficiency, but including air quality and the health of the building in a sense.

Right, well, I think it comes down to a really basic concept: What do we value? What makes something valuable? I talked with a property manager this morning and she is just seeing a tremendous shift in the types of things that people are asking for. Tenants are asking for LEED-certified buildings. They’re asking for things to be LEED certified when they don’t even know what that means. What they’re asking for is a better work environment. And they’ve heard that that is what LEED certification means. If you’ve got a right-sized, high-performing air system, then technically, it’s a healthier place. People hear about that and it’s attractive; people always want to go where the grass is greener, and if given the option, I think most people would choose to work in what they consider a healthy environment.

A number of large retailers are starting to install solar panels. Is that also part of the green building movement?

You know it’s interesting, a lot of them are installing solar panels because they have roof tops that can be like solar farms, it’s another source of revenue. It may be for their own use, but it could be energy that they’re selling back to the grid; it depends on what their goals are. But you’re finding some industrial users as well doing the same thing; using large spans of roof space for solar collectors. It’s like antennas on the roof that would be a form of miscellaneous income; this is another form of revenue

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and potentially a source of energy as well.

It's the same idea of just being smart about how you're designing buildings.

Very much so, and again the new construction is easier. At any point in time, the majority of our buildings are probably going to be existing ones. And there will be those that will be renovated, or they'll be new construction, and some of them will be demolished and hopefully recycled. But, trying to get the existing buildings, some of which maybe aren't as high a quality of construction or don't have those attributes, trying to get them to be as functional and as efficient as possible, I think, is the focus of several major real estate funds at this point, and really assessing assets based on that possibility.

What are the biggest challenges to making people aware of the value of sustainability and in quantifying that value?

Well, the valuation profession and the underwriting profession are very traditional, very liability-conscious, in-the-box communities. The investment community is very—not necessarily liability-conscious and conservative—but risk-averse. So like banking, they are just as concerned about what could go wrong. The easiest thing for the appraisal or underwriting or investment community to look at is what it sold for. Therefore, we have a sales price per square foot, we have a capitalization rate that we can look at and compare. These green buildings have sold for more, so we can say, here's the “market evidence,” the empirical data. Well, unfortunately, we don't have that data. The vast majority of buildings that have been certified, that you can really document as sustainable buildings, have been government buildings, and

they don't necessarily trade, and the investment real estate communities look for sales in the private sector for that type of information. There are not that many private buildings, yet, to create a significant amount of data on which you could base those types of comparisons.

It's still a very young market.

It is; but if you look at LEED, it's been around barely 10 years, and people really became aware of it probably around 2000, 2001. So, for people to even start incorporating that into the construction cycle, it would take a couple of years to get some buildings that were built to that standard and then certified, so in the scheme of things, it just hasn't existed that long. Because a new building, it may or may not trade in five to seven years.

Does a lot of this—the growth of the market, depend, too, on what happens in the future in terms of energy?

I've done a lot of work with the architectural community, and I do some work with the U.S. Green Building Council, and they see the long-term value and they get frustrated because the market isn't just automatically paying for it. But the market determines what is valuable. What appraisers do is assess and evaluate what the market is doing. So until there is enough performance in the market to see a trend or to make a determination, people waffle around. I think there are some things that we can be doing, and that's what the

seminar that I co-authored was about; be aware of this and look for these potential benefits. Because if you're not aware of what the potential benefits can be, you won't know whether or not they might make a difference. So, what you're saying, to a certain extent, is true because just looking at first cost and saying, okay, what is that worth longer term, well if you don't look at what it's worth longer term, you can't figure out whether the first costs are really justifiable. You have to look at the benefits over time, so some of it will be projections. For institutional investors, if it's a commercial property, they're going to look, oftentimes, at a 10-year holding period anyway. The challenge is just to make sure that the lending communities are considering all the factors they should be, and then if they want to assess the risk associated with those factors, that they're doing that, too. But if they don't understand the basic principles and practices of sustainability, then they can't really do that.

In a sense you're just teaching people that these are the things you need to keep your eyes on.

Pretty much; the thing is, in the U.S., appraisers are trained a little bit differently than in other countries. The Royal Institute of Chartered Surveyors, which I'm also a member of, is a U.K.-based organization, and it's a much older, much broader organization than our Appraisal Institute. But they really focus on the physical attributes of a building to value it. They value the income, but they really look at the building's physicality. In the U.S., historically, we have really focused on the income stream. That's just the reality. The investors, banks, everyone, that's what they look at, and the building is just more or less a vehicle to get this income stream. So getting

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people to really focus on what the building itself is bringing to the party, is just not a way that we have looked at property before.

It's interesting because it's a different way of thinking about value.

Yes, it absolutely is. I don't expect any of the appraisal methodologies to change; I think we'll be looking at more things. The analogy is often made that this is not unlike when they introduced air conditioning. At first it was expensive, and people thought, do you really need this, and then all of a sudden any building that didn't have it was obsolete. Now, you're looking at better building practices, energy efficiency, systems that are sized more appropriately to what people actually need, rather than larger systems just to make sure nobody is ever uncomfortable. Even some lease provisions require amounts of electrical load; require landlords to provide amounts of electricity that are well beyond what the tenant would ever use. It's a self-perpetuating type of situation where nobody goes back to look at this and say, wait a minute, we can do the same thing with a lot less and everybody can save money. It's just doing the same thing over and over rather than really assessing how a building is performing at all levels.

Where do you see this trend in 10 years?

I think it will much more mainstream. I think there will be code requirements in place that some of these things will just be the norm. But I also see this being a much greater challenge for existing buildings. Buildings that haven't been upgraded or their efficiency hasn't been improved; in the market they will not be seen as desirable, or being as desirable

as those that have been upgraded, put it that way. There's a greater chance they'll be discounted.

It's exciting, but it's also frustrating. People want proof, but in fact some of it is just logical, it just makes sense. You look at what's been done and you see and hear the success stories. One thing that speaks to the fact this will be around, and even more so, are groups like Gerding Edlen, developers like Gary Christensen with the Banner Bank Building in Boise, Joe Van Belleghem in Canada, every single group that gets involved in this, once they do one project, they only want to do more.

I was talking to a smaller developer who does sustainable work here, and one of the things he mentioned was that it's fun for them to do this kind of development, they have a passion for it.

Well, you feel like you're doing the right thing. Doing the right thing should get the right results, which should be as much or more profit. And I think, if in fact this becomes the prevalent mentality—building a high quality product—then everyone will benefit from it: the building inhabitants, the owner, the developer, it will go all the way down the chain. Everyone wants to save money, but it's how you save it. And if you save it through greater efficiency, through more thoughtful design and construction, that's a whole

lot different than just spending less on something.

Definitely, the bottom line is what everyone worries about.

Well, they have to be, and pension funds have responsibilities to their investors. But when you see investments that are successful, that do prove profitable, then why wouldn't you do this and have a win all the way around, economically as well as environmentally and socially.

That would be the win-win.

Yes.



Use Your Brain Power: Council's New Web Page Will Show You How

Energy efficiency has never been more important as consumers face increasing gas and fuel costs. While there is a wealth of information out there, it can be a confusing and daunting task to make sense of it all. In a move to help people become more energy-efficient, the Northwest Power and Conservation Council will be unveiling a new web page to provide the best information on available incentives and rebates in an easy to use format.

Visitors to the page can access a streamlined list of state and utility programs for Northwest residents by either clicking their area on a map or by typing in their zip code. The page will also highlight the Council's latest news, reports, and presen-



tations on energy efficiency, as well as the progress to increase energy efficiency in the region. Other helpful links, energy saving tips, and online feedback will be part of the page.

The Northwest has a proven track record on conservation achievements. In 2007, the region saved 200 average megawatts of electricity, enough for about 146,000 homes and about half the typical annual growth in electricity use. The region's total energy-efficiency achievement since 1978 is 3,700 average megawatts, more than enough to power Idaho and western Montana.

"The message we hope to give people is that conservation is the best resource to meet our future energy needs, and it's the foundation on which we can build other resources," says Council Chair Bill Booth.

Quarterly Quote

**"We must endure
our thoughts all night,
until The bright obvious
stands motionless in cold."**

Wallace Stevens

NORTHWEST POWER AND ENDANGERED SPECIES ACT REQUIREMENTS MERGE IN THE COUNCIL'S FISH AND WILDLIFE PROGRAM

One of the complexities of protecting fish and wildlife from the impacts of hydro-power dam operations is the fact that multiple laws provide protections. Planning, then, must account for multiple statutory requirements.

The Northwest Power Act, for example, takes a broad approach, addressing the impacts of dams on all affected fish and wildlife. The Endangered Species Act (ESA), on the other hand, focuses much more narrowly on the affected species but takes a broad approach to impacts. Hydropower impacts are among the many impacts addressed under the ESA, while hydropower is the single focus of the Power Act. Yet despite their different approaches, the two laws work together in the Council's Columbia River Basin Fish and Wildlife Program.

Until the early 1990s, the Council's fish and wildlife program, developed under the Power Act, included detailed recommendations for hydrosystem operations to protect fish and wildlife. This was important because the federal agencies that operate the federal dams, and the Federal Energy Regulatory Commission, which licenses non-federal dams, are required by the Power Act to account for the Council's planning in their decision-making.

Beginning with the first ESA listings of Columbia River Basin salmon and steelhead, however, this no longer was necessary because the federal agencies that manage, operate, and regulate the federal dams on the Columbia and Snake rivers and their tributaries, develop detailed plans for system operations and for individual dams that are intended to improve conditions for the affected fish and wildlife. These federal agency plans are described and reviewed largely in biological opinions issued by NOAA Fisheries (formerly the National Marine Fisheries Service) and the U.S. Fish

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and Wildlife Service for the operation of the Federal Columbia River Power System and the Bureau of Reclamation's dams in the upper Snake River Basin. The first biological opinions were issued in the early 1990s after several salmon species were listed for protection under the ESA.

The Power Act requires the Council to review and update its fish and wildlife program at least every five years. In 2003, when the Council last amended the mainstem operations section of the program, two overriding concerns formed the policy foundation of the resulting recommendations. The first was that, consistent with the Northwest Power Act, mainstem operations should protect, mitigate, and enhance all fish and wildlife, including ESA-listed species, affected by the development, operation, and management of the hydrosystem. Operations mandated by the biological opinions under the ESA needed to be flexible and account for dam impacts to non-listed as well as listed species, the program recommended. Second, spill, flow, and other mainstem dam operations should be biologically effective and achieved at the minimum economic cost while remaining flexible to change as new scientific information becomes available.

Those concerns also motivated the Council in developing the mainstem operations section of the draft 2008 Fish and Wildlife

Program. The Council issued the draft program for public comment in September and is accepting comments through December 1. The program recognizes that the federal agencies that operate the dams have responsibilities under both the ESA and the Northwest Power Act to protect and recover fish and wildlife affected by the dams. At the same time, operators of non-federal dams have responsibilities to protect fish and wildlife as conditions of their operating licenses issued by the Federal Energy Regulatory Commission -- one of the federal agencies that is required to take the Council's fish and wildlife program into account when making decisions.

The Council's draft 2008 Program accounts for these disparate mandates, plans, and responsibilities by recognizing them as the baseline objectives and measures for the Council's mainstem recommendations. In this context, the mainstem section of the draft program includes 1) a systematic set of biological objectives, habitat considerations, principles, and strategies to protect, mitigate and enhance all fish and wildlife of the Columbia River Basin affected by the development, operation and management of the hydrosystem, whether listed or not; 2) recognition of the commitment by federal agencies to the objectives and measures in the biological opinions and other plans; 3) additional objectives and measures that may be necessary to protect and improve conditions for fish and wildlife in the mainstem that are not listed under the Endangered Species Act; 4) power system impacts and optimum strategies to improve both the power supply and conditions for fish and wildlife in the rivers; 5) support for rigorous monitoring and evaluation of measures and public reporting and accountability; and 6) broader planning considerations consistent with a long-term program for protection and mitigation beyond the

See: Northwest Power and Endangered Species Act . . . on page 14

Draft 2008 Fish and Wildlife Program *(continued from page two)*

Subbasin plans provide a coordinated and integrated home for fish and wildlife actions across the basin. Federal and state agencies and Indian tribes are working with local partners to expand subbasin plans into draft and final recovery plans for ESA-listed populations.

In the 2008 Fish Accords, Bonneville and other federal agencies committed to extensive, 10-year implementation plans, with associated actions, based on the foundation built by the Council's program over the last 26 years. This foundation includes water management and fish-passage measures (in the original, 1982 Program), mainstem and off-site mitigation measures (1987 and subsequent program amendments), the program framework (2000 amendment), and the subbasin plans (2004-2005 amendment).

Thus, in the Draft 2008 Program, the Council's focus turns from planning to implementation and performance. The draft program:

- Increases project performance and fiscal accountability by establishing reporting guidelines and using adaptive management to guide decision-making
- Calls for a renewed regional effort to develop quantitative biological objectives for the program
- Commits to a periodic and systematic exchange of science and policy information; and
- Emphasizes an expanded monitoring and evaluation framework coupled with a commitment to use the information obtained to make better decisions

The legal authority for the program is in the Northwest Power Act of 1980, which directs the Council to develop a program to "protect, mitigate, and

enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries ... affected by the development, operation, and management of [hydroelectric projects] while assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply." The Act directs the Council to review the program at least every five years. The Act also directs the Bonneville Power Administration, a federal power marketing agency that sells electricity generated at federal dams in the Columbia River Basin, to fund the Council's program.

The Draft 2008 Program is posted on the Council's website, www.nwcouncil.org. Comments will be accepted through December 1, 2008. Comments may be submitted on the Council's website; by mail to Mark Walker, Director of Public Affairs, NPCC, 851 S.W. Sixth Ave., Portland, OR, 97204, or at public hearings.

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NORTHWEST POWER AND ENDANGERED SPECIES ACT ...

immediate requirements of the ESA.

The draft 2008 Program addresses new requirements for mainstem protections, as well. These are found in agreements signed by the Bonneville Power Administration, the Yakama, Warm Springs, Umatilla, and Colville tribes, the Columbia River Inter-Tribal Fish Commission, and the states of Idaho and Montana. In the agreements, Bonneville committed to fund a number of specific projects over 10 years, including fish habitat improvements in the mainstem Columbia River and the estuary. Projects also address fish production and harvest, and monitoring and evaluation of project results. The projects largely derive from measures in the Council's fish and wildlife program.

The draft 2008 Program adopts the projects as actions the federal agencies committed to fund consistent with their requirements

in the Power Act. The projects also help to fulfill fish-recovery requirements under the Endangered Species Act.

The draft program commits the Council to work with the federal agencies, tribes, and states that signed the agreements to develop multi-year implementation plans to ensure that those commitments as well as the statutory requirements of the Power Act and the Endangered Species Act are implemented over time. As with all projects implemented through the Council's fish and wildlife program, this will include independent scientific review of the projects to ensure they are biologically sound and consistent with the program, including subbasin plans. Regular reporting of project results also will be required, and funding for projects in the agreements must not affect sufficient funding for other priorities,

according to the draft program.

The Council's fish and wildlife program is not a vehicle to guarantee funding to any specific project. But by recognizing the legal requirements of the Power Act and the Endangered Species Act while honoring the commitments made in the 10-year agreements, the Council's program will be implemented in a way that does not disadvantage one commitment or requirement in favor of another.

Council Decisions

July

High-level Indicators

The Council voted to endorse a list of high-level indicators to measure the success of the Columbia River Basin Fish and Wildlife Program. The decision did not make the indicators part of the program, but only signaled a commitment by the Council to keep developing them with other interested parties. Both biological indicators and project-implementation indicators are included. A list and further explanation is on the Council's website at www.nwcouncil.org/library/2008/fwindicators.htm

August

Klickitat hatchery plan advances

The Council recommended that the Klickitat River Anadromous Fisheries Master Plan proceed from the initial, conceptual phase to the design phase (step two of the three-step approval process for fish-production facilities funded through the Council's fish and wildlife program). The Council asked the Yakama Nation, the project sponsor, to respond to questions raised during independent scientific review of the initial proposal as part of the second phase of development. The Yakama Nation proposes to use artificial production in the Klickitat River Subbasin to benefit conservation and recovery of spring Chinook and steelhead populations while sustaining harvest opportunities and maintaining a focus on harvest augmentation for fall Chinook and coho salmon.

History Now

The only free-flowing stretch of the Columbia River — that is, not affected by dam operations — is in British Columbia, from the headwaters at Columbia Lake to Donald at the head of Kinbasket Reservoir behind Mica Dam, a distance of 112 miles or 180 kilometers.



To learn more about Columbia River history, visit the Council's Columbia River History Project website, www.nwcouncil.org/history

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