Building Sustainable Communities — One Person at a Time

by John Baur

Building sustainable communities” is a phrase most often invoked in an environmental sense, conjuring a vision of a town or municipality that takes no more from the environment than it puts back in.

That’s certainly one aspect, but there is much more to the idea of sustainable communities, according to planners and environmentalists who pursue that vision.

Doug McKenzie-Mohr, an environmental psychologist, developed the community-based social marketing program, which draws heavily on research in social psychology in encouraging behavioral change. The emergence of community-based social marketing over the last several years can be traced to a growing understanding that programs that rely heavily or exclusively on media advertising can be effective in creating public awareness and understanding of issues related to sustainability. But such programs are limited in their ability to foster behavioral change.

To meet the need to change behavior, McKenzie-Mohr has taken a veritable library of case studies and extracted from them a set of tools—the tools a marketer might use to sell a new brand of soap but which, in the hands of McKenzie-Mohr & Associates, can be used to help a community increase home recycling efforts or reduce greenhouse gas emissions or create any variety of community programs to foster sustainable behavior.

From his Web site at http://www.cbsm.com, McKenzie-Mohr, who teaches psychology at St. Thomas University, in Fredericton, New Brunswick, Canada, studies how people make the hundreds of decisions that make up daily life and how those decisions can be nudged down a more environmentally friendly path.

His site is a treasure trove of case studies of projects—both successful and less so. More than 600 articles and more than 100 case studies are on file, broken down by topic—transportation, greenhouse gases, efficient water use, hazardous waste, litter reduction.

Have an idea to increase recycling in your town? Go to the community-based social marketing Web site and there will be dozens of programs on the subject, including contact names, descriptions of how the program was implemented, and what the results were.

The programs show both what individuals working together can do and how community-based social marketing can be used to effect those changes. They also indicate how extensive some of the features of community-based social marketing can be.

More than an Environmental Issue

To Bob Doppelt, director of the Center for Watershed and Community Health and the Institute for a Sustainable Environment, in Springfield, Oregon, the difficulty in McKenzie-Mohr’s approach is finding the resources to do the advance surveying, research, and follow-up when it’s often hard enough just to do the project. The community-based social marketing approach is “resource intensive,” Doppelt said, but the information derived is valuable.

Without understanding what might cause people to change their behavior in one specific community, it’s tough to know whether a project is likely to succeed or fall on its face.

“Good communication and constant communication are critical,” Doppelt said. “The

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John Baur is a science writer with Oregon Sea Grant in Corvallis.
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principles [the proponents of community-based social marketing are] discussing can be resource intensive, and a lot of times it's not feasible. But of course, they're right when they say the better prepared you are, the better chance you have of succeeding."

The key to changing behavior is to understand people's perspectives and try to bring them along one step at a time rather than all the way at once, according to Doppelt.

"You need to communicate just beyond the level . . . people are at if you want to create change," he said. "But you can't use terms or concepts that are too far outside their experience or they'll turn it off."

For instance, if a community group wanted to encourage greater recycling efforts, it wouldn't be necessary and might even be counterproductive to try to educate everyone in the community about the biological and chemical processes going on in a landfill or the reactions that cause organic material to break down in a compost heap. It would be enough to show that by extending the life of the landfill by keeping recyclables out, they lower the long-term cost of solid waste and save energy and resources in making new items from raw material.

"People tend to think of recycling as being 'something that's good for the environment,'" he said. "You want to expand that thinking. Make them see that it's really about cost saving . . ., that it has social benefits as well. Then you can start changing their behavior."

Defining "Sustainable Community"

Ask proponents what sustainable community means and you're likely to get a slightly different answer every time.

In the simplest sense, a sustainable community can mean one that puts as much back into the environment or the landscape as it takes out. In that regard, a sustainable community is really more a process than a target, since the community, its needs, and the resources available are always changing. But other adherents say that it's not enough to limit sustainability to purely environmental concerns. Those concerns affect and are affected by a whole range of other issues—social, economic, political—that will change from community to community. And that's why it isn't surprising that everyone has a slightly different definition for the phrase, according to Jennifer Allen, the sustainable business liaison for the Oregon Economic and Community Development Department.

For Allen, there isn't a meaningful distinction between environmental, economic, and social actions. They are interconnected. "To me it's never been just about the environment," Allen said. "I worked at the World Bank for 10 years. I don't see it as taking traditional economic development and making it environmentally sound."

Allen cited as an example a town she visited in the Ukraine during her career with the World Bank. The people there told her that the water and air have been getting cleaner over the last five years, which was a good thing. But the reason this good thing was happening was that the economy in that part of Eastern Europe had collapsed and all factories had been shut down for five years.

Poverty and malnutrition were rampant, and the community was falling apart.

"It's not enough to say 'The river is "x" dirty and we all agree that it should be this much cleaner.' . . . So you pass some laws, tell everybody to stop what they're doing and that will stop the problem. But if you're not asking questions about the impact of those laws on businesses, how much it will cost, you're missing part of the problem."

The question is how to build strong communities in which businesses can thrive in an environmentally sound way so that the community doesn't just create a zero-sum gain in its relationship to the environment—taking out no more than it can return—but actually restores it.

How to make that happen has to come from within the community, Allen said. "It's hard for anybody outside a community to come in and tell people what to do and have them adopt that as their own. How do you make it in their self-interest? It comes from the local people who are owning the issue."

Wallowa County
— A Case Study in Building Sustainability

One such community is Wallowa County in northeastern Oregon. Several decades ago, this community made its living cutting down trees, milling them, and shipping them to the far
corners of the world. Boise Cascade and other timber giants were kings. But then came the collapse of the industry in the early 1980s, followed by legal and political struggles over endangered species and forest management, and the economy took a deep hit. Since the late 1980s, the county has had one of the highest jobless rates in the state.

The economic collapse was not fun to go through, but it did help prepare the citizens to begin thinking in new ways, according to Diane Snyder, executive director of Wallowa Resources, a nongovernmental agency that has led the sustainable communities effort in that corner of the state.

“Since 1980 there’s been a big change in the way the economy is structured. Endangered species listings and additional environmental regulations have changed the face of rural communities,” Snyder said.

Under the new model, businesses were welcomed because they brought jobs, but that left the community in the position of having to take what it could get and suffer the consequences in order to attract and retain employers. At the root of the sustainable communities movement is the notion that citizens should participate in the process and make decisions based on their values rather than their needs, Snyder said.

Out of efforts to preserve wild salmon runs, local officials came together with Martin Goebel, the founder of Sustainable Northwest, a Portland, Oregon-based nonprofit dedicated to building partnerships that promote environmentally sound economic development in communities of the Pacific Northwest. Sustainable Northwest initiated a series of public discussions about what the people of Wallowa County wanted their community to be like. From these discussions rose Wallowa Resources.

“Our group was formed to provide leadership in promoting community health, blending the needs of the community and the land,” Snyder said. She agrees that sustainability means more than giving back to the land what a community takes away. “When we talk about sustainability, we’re talking about a set of values. We’re providing the tools for the people to begin to change themselves, to learn, broaden their own knowledge.”

Change won’t be immediate, but it will come, she added. “It’s taken 50 years for the forests to get the way they are now. We won’t fix them overnight, but we will fix them.”

And, just as the precise meaning of sustainability is hard to pin down, so is the precise meaning of the word community. In some cases it can mean a neighborhood, or a group spread out over some area but sharing a need or value. In others it can mean a city or a county, or a whole state or industry.

For Wallowa County to truly become a sustainable community, the rest of the state has to be willing to step up to the plate, Snyder said. Not in terms of handouts or grants, but in the business decisions it makes every day.

“There’s an education piece of this puzzle for the urban populace. If the urban population...”

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“Community-based social marketing” describes a blend of psychology and social marketing that has promise in advancing the adoption of sustainable behavior.

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A Success Story

One successful project, the 1-2-3 Campaign Against Global Warming, was launched in 2001 by Rick North, the chair of the environmental committee at the First Unitarian Church in Portland, Oregon. His goal was to engage his church community and get them to reduce their contribution to greenhouse gases by changing their behavior.

Using the tools he learned in the community-based social marketing program, North asked congregants to reduce their household thermostats by one degree in the heating season; reduce their driving speeds by 2 miles per hour from the speed they’d normally drive when traveling 60 miles per hour or more; and replace three regular light bulbs used extensively at home with compact fluorescent lights. These three actions, according to the Community Based Social Marketing Web site, would reduce carbon dioxide generation by 1,300 pounds and save about $90 annually per household. Participants were asked to sign forms pledging to do at least one of those three actions. The campaign featured a kickoff program, mailings to all households, public support from the ministers, weekly demonstrations of compact fluorescent light bulbs, and weekly church bulletin updates.

The results far exceeded North’s expectations. In all, 412 households pledged, reducing annual CO₂ generation by approximately 580,000 pounds. To gauge results, a professional pollster helped design a survey/evaluation form, which 46 percent of the participants filled out. Fifty-five percent of the households fulfilled all of their pledges, and 43 percent fulfilled some of their pledges. Ninety-five percent planned to continue their actions. Even more promising, 63 percent took additional actions against global warming on their own, specifically citing what they had done. Finally, 60 percent told others about the program, with 16 percent telling four or more people. Other Unitarian churches and denominations are now considering the 1-2-3 Program, and it also may expand to workplaces.

The campaign was so successful that last year North launched a new initiative using the community-based social marketing tools. The Food for Thought (And Action!) program brought to light the connections between dietary habits and societal well-being, empowering congregants with information on what they could do and motivating them to modify their eating and buying habits to promote positive environmental, social, economic, and health benefits. Like its predecessor, the Food for Thought project exceeded a 90 percent success rate.

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If the urban population does value stewardship of the land, they need to provide market incentives to promote acceptance of products that reflect those values. . . . We’re not just looking at sustainability of a community at a community scale, but the interactions within the greater community.”

Sustainable Northwest has launched a program, Healthy Forests, Healthy Communities, that seeks to make those connections.

Maia Enzer is director of Healthy Forests, Healthy Communities. To her, the marketing collaborative is an obvious extension of the work within rural communities to create new, environmentally sensitive businesses by marketing their products in the region’s urban marketplaces.

Throughout the rural areas of the Northwest, people are trying to build businesses that utilize the byproducts of forest restoration. No matter how good or environmentally sensitive their product is—whether it’s flooring and furniture or roofing materials—it won’t mean a thing if people don’t buy it.

How do you get the consumer to decide against automatically running down to the chain hardware or home improvement store and buying whatever is cheap and easily available?

“People want a product that is esthetically pleasing, that is quality, and that they can identify with,” Enzer said. “Often the consumer is more attracted to the story of a small local entrepreneur from the region. . . . They care about the environment and the regional identity. We try to help them see that they can use their purchasing power to strengthen their home, their region.”

And many of these products can be cost competitive with the less regional, less environmentally sensitive products at the big box stores, she added. The challenge is to find easier ways to get those products in front of the consumers.

Creating those opportunities and dealing with change is “what makes people and communities and ecosystems resilient,” she said. “It’s a constant process, it’s incremental. You’re constantly changing and growing.”

Matthew Buck, the communications director for Sustainable Northwest, said the most important part of the work his group does doesn’t deal with the environment at all—it deals with people. “We really try to be guided by the assessment of folks in that community,” he said. “In the work that we do at the local level, we’re not so interested in changing people. We really work with a locally driven process. Typically we come into a situation where there’s crisis, division, or conflict. We serve a convening role; we help talk the issues through and determine what members of the community can agree on to meet the problem. “We’re not an organization with a formula that we’re trying to sell people. The situation needs to be unique to the participants, to the place. The problem with building a template is that every place is different, it’s physically different, the people are different, the needs are different. You’ve got different possibilities. Whatever challenges come to Wallowa now, they’ve built the capacity to respond.”

New Book Explores Management of Estuaries

Pacific Northwest estuaries range from large (Washington’s Grays Harbor, 58,000 acres) to small (Oregon’s Twomile Creek, 20 acres); from rural (Big Creek estuary in Lincoln County, Oregon) to urban (Puget Sound, in Washington, supporting a population of 3.9 million); and from pristine to seriously degraded. They are used as stopovers by migratory birds, as spawning and nursery habitat for salmon, and—for people—as places of reflection, recreation, and commerce.

Estuary management consists largely of understanding issues and stakeholders, regulating use, and monitoring development. However, it also involves knowing the ecological system and its cycles, characteristics, tendencies, and trends. Indeed, lack of information might be the single thing that most hinders effective management.

In this book, the Pacific Northwest Coastal Ecosystems Regional Study provides the basic information about estuaries in the region, including acreage, major population centers, natural features, and freshwater sources. The book also discusses federal and state agencies and other groups involved in estuary management, and it examines the perennial issues that arise when human development competes with natural habitat.

Estuary Management in the Pacific Northwest reviews 4 estuaries in Washington, 22 in Oregon, and 1 in northern California.

Estuary Management in the Pacific Northwest By Pacific Northwest Coastal Ecosystems Regional Study

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Moving Ocean Governance Toward an Ecosystem-Based Approach

by Jane Lubchenco

Editor’s Note: The following article is based on a presentation that Jane Lubchenco gave at the American Association for the Advancement of Science’s annual conference in Denver, Colorado, on February 15. She is a professor of zoology at Oregon State University.

Two national commissions are currently reviewing the country’s ocean policies and practices. Both reviews have put a premium on grounding their findings in the best and most current scientific findings. I serve as one of four scientists on the independent Pew Oceans Commission, and I have testified before the federal Commission on Ocean Policy many times on these issues. . . . I wish to highlight two key points that emerged from the commission’s deliberations and the scientific findings that underpin the report.

(1) One of the most striking findings of the commission is the extent to which the nation’s ocean policies and practices simply do not reflect current scientific knowledge. Concepts such as the importance of habitat, of interactions among species in an ecosystem, the natural variability in populations, the fact that the young of many species move—or disperse—away from their parents, and indeed the overall workings of an ecosystem are not adequately reflected in our laws or regulations. Moreover, our policies retain the old views that oceans are endlessly bountiful and infinitely resilient. Current scientific knowledge suggests otherwise.

(2) The second key point is the extent to which the nation has seriously underinvested in understanding how ocean ecosystems work and therefore how we could manage our activities more responsibly. There is strong scientific consensus that ecosystem-based management is essential to the wise use of oceans, yet we have relatively few studies to guide the implementation of ocean ecosystem-based management.

Why have our policies and investments not kept up with the realities of our time? The short answers are “history” and “inertia.”

In this context, it is useful to note that the foundation of current ocean policy in the United States was laid in a very different environment than what exists today. The principal laws designed to protect our coastal zones, endangered marine mammals, ocean waters, and fisheries were enacted 30 years ago, on a crisis-by-crisis, sector-by-sector basis. Much of what exists of an ocean governance system in the United States today can be traced to recommendations of the Stratton Commission—the nation’s first comprehensive review of ocean policy. Issued in 1969, the Stratton Commission report focused on oceans as a frontier with vast resources and largely recommended policies to coordinate the development of ocean resources. Reflecting the understanding and values of this earlier era, the country has continued to approach our oceans with a frontier mentality. The result is a hodgepodge of policies and practices that are at striking odds with our current scientific understanding of ocean ecosystems. The Pew Ocean Commission report to the nation will detail how the country can modernize its ocean policies and practices in order to manage our resources more responsibly.

The commission based its findings and recommendations on the wealth of input from citizens and scientists around the nation. For example, the commission contracted with a distinguished group of scientists to write a series of reports that summarize the “state of..."
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the science” on seven topics: managing fisheries, ecological effects of fisheries, marine reserves, marine pollution, coastal sprawl, introduced species, and aquaculture. These reports and a complete description of the commission and its activities are available on the Web at http://www.pewoceans.org. The reports highlight the overarching importance of understanding the workings of marine ecosystems, and they point out the general lack of integrated programs designed to do just that.

One striking exception to the lack of integrated, large-scale studies is the novel, innovative program called PISCO. The Partnership for Interdisciplinary Studies of Coastal Oceans (http://www.piscoweb.org) was established in 1999 with funding from the David and Lucile Packard Foundation. The goal of PISCO was to bring together the best of high-tech and low-tech science—plus good old-fashioned elbow grease—from a wide range of disciplines to open the “black box” of a single, large marine ecosystem. Focused along the west coast of the U.S., PISCO studies the nearshore portions of the California Current System, a highly productive, rich ecosystem spanning Washington, Oregon, and California. In a very short period of time, the PISCO teams, based at Oregon State University, the University of California at Santa Barbara, the University of California at Santa Cruz, and Stanford University’s Hopkins Marine Station, have made remarkable inroads in cracking the black box of this nearshore system.

PISCO scientists are bringing new genetic, acoustic, microchemistry, remote sensing, and data-base integration technologies to bear on understanding the nearshore marine ecosystem. In conclusion, I would say that it’s time to take our oceans more seriously, to manage them responsibly, and to learn how they work.

New Research Raises Question About Hatchery-Raised Salmon

by Paul Hoobyar

Researchers in Canada have added a new twist to the debate over the impacts of hatchery fish on their wild brethren. Research findings recently published in the journal Science show that chinook salmon raised on a salmon farm in Canada developed markedly smaller eggs after four generations in captivity.

Canadian research indicates that hatchery-raised salmon produce smaller eggs than their wild counterparts. The significance of this is still subject to debate.

Daniel Heath, an evolutionary biologist at the University of Windsor in Ontario, Canada, who led the research team, examined eggs produced by four generations of chinook salmon over 12 years at Yellow Island Aquaculture in British Columbia. They found that the fish produced more eggs, but the size of the eggs declined by 25 percent as wild fish interbred with hatchery fish.

Scientists have determined that egg size is related to survival, and it’s generally thought that a female salmon laying larger eggs is providing her progeny an advantage. Larger egg size also equates to larger offspring, which have a greater chance of survival under natural conditions.

However, because hatchery fish are well fed and protected from predators, eggs of all sizes have the same chance of surviving in these more sheltered environments, Heath and his team concluded. Thus, the smaller but more numerous hatchery offspring can outcompete the larger fish by sheer force of numbers in hatcheries. Once the fish leave the hatchery, however, their advantage diminishes.

Not all biologists and hatchery managers agree with Heath’s research findings. Nor is there broad consensus that hatchery fish are significantly different from wild fish. Many groups assert that there is no significant difference between hatchery and wild fish and have sued the federal government to remove a
Seals Do Eat Salmon
by Joe Cone

For years, while scientists said that pinniped predation probably didn’t take that big a bite out of healthy salmon populations, nonspecialists stubbornly refused to believe it.

In 1997, the Oregon Plan directed the Oregon Department of Fish and Wildlife to evaluate the putative pinniped problem, and since 1997 NMFS has funded ODFW research to consider the question on a site-specific basis. ODFW research focused on the Alsea River estuary and lower river in the last few years. At the Oregon AFS meeting in February, the preliminary study results were presented.

Bryan Wright, a biometrician with ODFW, described the three approaches that the study has taken to put some numbers on the extent of seal predation: directly observing foraging seals during daylight hours; tracking marked seals with telemetry 24 hours a day; and collecting and analyzing scat (fecal samples) to identify prey species taken by seals.

In recent years, approximately 400 to 600 harbor seals have resided in Alsea Bay nearly year-round. The biologists suspected that some smaller number of seals moved into the lower 12 miles of the river to forage for adult salmonids. Fifty-nine seals were captured and tracked using ultrasonic transmitters and hydrophones; 23 of these seals were detected upriver on at least one occasion (although 7 seals accounted for nearly all of the upriver detections). Analysis of the fecal samples collected showed that salmonids occurred in about 10 percent of all samples collected.

Based on the visual observations of foraging seals and on results of the tracking study, which showed that seals foraged primarily at night for salmonids in the river, the ODFW research team estimated that the seals might have taken between 5% and 40 percent of the 2002 return of wild adult coho salmon (the species of greatest concern in this study). This is a wide range of possible impacts on the Alsea River coho population.

So, are pinnipeds a problem for salmon recovery? Wright said they “could be if it’s at the high end” of the estimated predation rates, but “probably not” if it’s at the low end. Actual salmon population sizes would be a factor, too.

ODFW knows there’s more research to be done. Wright made the case that the study so far has mainly focused on developing the methods needed to conduct the field work and develop initial estimates of salmonid consumption. The next step is to improve the precision of the estimates and to better understand the foraging behavior and predation success of seals at night.

Estuary Research Hits New Milestone
by John Baur

The big news at the annual meeting of the Oregon chapter of the American Fisheries Society last month didn’t come out of the estuary sessions. Rather, the big news was that there even was an estuary session, according to Dan Bottom, the convener.

Bottom, a fisheries research biologist with NOAA’s Northwest Fisheries Science Center at the OSU Hatfield Marine Science Center in Newport, has been a leader in a multiyear study of the Salmon River estuary, on the Oregon coast north of Lincoln City. According to Bottom, the results reported at the February meeting constituted a major sea change in the approach that has been taken in salmon research and efforts to save the threatened species.

The long-dominant production model focused on how many fish there were to be caught, and its goal was to keep those numbers up. To that end, the function of estuaries was discounted and the role they play in salmon life history was considered inconsequential, if it was considered at all. In fact, the prevailing view of the production model was that hatchery salmon were just as good as naturally occurring runs, and since hatchery fish could be raised in captivity until they were large enough...
### Legislative Update

Editor's Note: Below are snapshots of bills currently under consideration in the 2003 legislative session that might have an impact on watersheds and salmon habitat. Caution should be used when reading the descriptions, since language in any bill can change rapidly and significantly. If you have an interest in a specific bill or want more information about other natural resource legislation, contact your local senator or representative or visit [http://www.leg.state.or.us](http://www.leg.state.or.us).

#### House Bills

**HB 2138**
Defines the terms naturally produced fish, population, recovery, and self-sustaining for purposes of the Oregon Plan.

**HB 2259**
Extends sunset (for six years) for surcharges and fees on certain angling licenses, ocean troll salmon fishery permits, Columbia River gill-net fishery permits, and poundage of food fish imposed for fish restoration and enhancement programs. House recommended “do pass.”

**HB 2293**
Allows local governments and riparian landowners to create and use mitigation banks and authorizes local governments to compensate riparian landowners.

**HB 2364**
Repeals laws relating to wetlands: Oregon Wetlands Mitigation Bank Act of 1987; State-wide Wetlands Inventory system; wetlands conservation plan statutes; wetlands fill and removal statutes.

**HB 2376**
Abolishes the Oregon Watershed Enhancement Board. Transfers the duties, functions, and powers of the board to the state Department of Agriculture and the state Department of Fish and Wildlife.

**HB 2431**
Allows person seeking a permit to remove material from or fill state waters to pay money into the Oregon Wetlands Mitigation Bank Revolving Fund Account instead of obtaining a permit. Specifies that the director of the Division of State Lands has the burden to prove that wetlands exist on a property for which a permit is sought. Allows person to seek writ of mandamus to force the Division of State Lands to make a final decision on the permit application after 90 days.

**HB 2459/HB 2460**
Requires that hatchery fish bred from wild stocks be considered wild fish and allowed to spawn. Requires hatchery propagation to be from wild fish. HB 2460 would make this a ballot measure at the next primary election.

**HB 2515**
Directs the Oregon Watershed Enhancement Board to provide funding from the Watershed Improvement Operating Fund for positions in soil and water conservation districts. Specifies that persons employed in positions funded by the board perform functions relating to restoration and protection of native salmonid populations, watersheds, fish and wildlife habitats, and water quality.

**HB 2516**
Directs the state Department of Fish and Wildlife to develop and implement a plan to control and reduce, through nonlethal means, pinniped predation of salmonids in state waters.

**HB 2606**
Defines the terms native stocks, recovery, and self-sustaining for purposes of the salmon and trout enhancement program.

**HB 3006 & SB 645**
Defines isolated wetlands and marginal wetlands for purposes of the regulation of removal and filling of material. Allows removal and filling of material in certain isolated and marginal wetlands and in wetlands of less than one acre in size to occur without permit. Allows cities with a population of 50,000 or fewer persons to develop approval or denial procedures for development permits, building permits, or actions that affect marginal and isolated wetlands.
Senate Bills

SB 294/SB 416
Modifies provisions relating to permit requirements for removal and fill activities conducted within essential indigenous anadromous salmonid habitat so that a permit would be required regardless of the amount of material.

SB 317
Prohibits the transfer of water rights for agricultural use to nonagricultural use. Requires the Water Resources Commission or the Water Resources director to determine whether water is available for appropriation by determining whether water is available for demands 50 percent of the time.

SB 384
Abolishes the Oregon Watershed Enhancement Board. Transfers the duties, functions, and powers of the board to the state Department of Fish and Wildlife and Access and Habitat Board.

SB 398
Requires state government to obtain the consent of the county governing body for certain acquisitions of lands or waters by the federal government. Repeals statutes giving consent of the state to certain acquisitions of lands or waters by the federal government.

SB 399
Removes creation, restoration, or enhancement of wetlands from outright permitted uses of land in exclusive farm use zone. Authorizes creation, restoration, or enhancement of wetlands in exclusive farm use zone subject to adoption of exception to statewide planning goal preserving agricultural lands. Authorizes compensatory wetlands mitigation as outright permitted use in exclusive farm use zone.

SB 430
Directs the state forester to manage 50 percent of Tillamook and Clatsop State Forests with the goal of protecting nonconsumptive uses. The State Forester shall first protect the areas that contain critical fish habitat, wildlife, drinking water, or trees that survived the Tillamook Burn. Allows the state forester to increase timber harvest to prevent losses in funding to county governments and schools if reductions in forest revenues occur.

SB 576
Requires the Independent Multidisciplinary Science Team to accept input and opinions from nonmember scientists with certain expertise when discussing potential official action of the team.

SB 591
Changes creation, restoration, or enhancement of wetlands from outright permitted uses of land in an exclusive farm use zone to conditional uses. Authorizes compensatory wetlands mitigation as outright permitted use in an exclusive farm use zone. Disqualifies land from farm use or open space use special assessment if wetlands are created, restored, or enhanced on land on or after a certain date. Applies to property tax years beginning on or after July 1, 2004.

SB 633
Establishes a state policy against the discharge of mercury, dioxins, lead, polychlorinated biphenyls, and certain carcinogens into waters of or on ground in the Willamette basin. Directs the Water Resources Commission to establish a schedule of fees assessed on water right holders. Specifies that the fees collected are to be used for the protection and restoration of state waters. Suspends water right permit of persons failing to pay the fee. Prohibits development of undeveloped water right held for municipal use until the Water Resources Commission conditions use to ensure minimum water flows to support public uses. Establishes a tax on the sales of pesticides and fertilizers. Dedicates moneys to Restoration and Protection Subaccount of Parks and Natural Resources Fund.

SB 700
Directs the State Fish and Wildlife Commission to provide salmon fry at one-eye stage of development to persons operating remote hatchboxes. Directs the commission to stop the use of potentially harmful tagging and marking methods for hatchery smolts. Specifies that the remote hatchbox program receive moneys from the Watershed Improvement Operating Fund.

This legislative update was created with the help of Kristin Feindel, legislative aide for Senator Joan Dukes.
Oregon Plan Annual Report

The fourth annual report of the Oregon Plan continues a tradition by OWEB of creating reports that are uniquely different from their predecessors. Unlike previous reports, which highlighted the volunteers, agency personnel, and others involved in the plan, this report focuses on the projects that have been completed in each basin in Oregon and the status of the agency, volunteer involvement and monitoring and scientific oversight that the plan depends on for success. Part I provides an overview of each of Oregon’s 15 major river basins, with project locations, “investments,” and other accomplishments highlighted. This section uses high-tech graphics and map software for each basin to help tell the story. The report also notes challenges facing each basin. Part II focuses on what the authors call the four “key elements” of the Oregon Plan: agency actions, voluntary restoration actions, monitoring, and science oversight. The report identifies the current priority for each key element. For anyone wanting to know more about the nuts and bolts of the Oregon Plan, as well as its costs (in millions), this report provides a handy reference document.

See Salmon Spawning

A new Web site shows video clips of five different species of salmon spawning. These clips are worth a look for teachers and others who want to view short videos of spawning salmon. The clips were put together by students at the University of Washington. To see the videos, visit http://students.washington.edu/manu19b/UWspawnings.html.

Good Example of Educational Web Site

The Georgia Basin (Vancouver Island, Canada) has posted a flashy and informative Web site about its local steelhead and the recovery plan that has recently been approved. This site is a good model to review for those who want to improve their use of the Web for educational purposes about salmon recovery planning and restoration. The URL is http://www.steelheadrecoveryplan.ca/crisis.htm.

Oregon State Government Creates New Sustainability Web Site

OregonSolutions.net was created to communicate new developments in Oregon state government while connecting Oregonians with local agencies, organizations, and businesses taking leadership roles in sustainable development. Designed to address important topics of sustainability, this Web site also provides the user with an interactive calendar to communicate and facilitate events. For more information, visit http://www.oregonsolutions.net.

A Coalition of Anglers, Conservationists, and Landowners Propose Plan for the Tillamook Rainforest

The Tillamook Rainforest Coalition is a group of anglers, commercial fishers, conservationists, landowners, and others who want an alternative management plan to the one proposed by the Oregon Board of Forestry. The coalition’s goal is to promote a more balanced future for Oregon’s rain forest. Visit the Tillamook Rainforest Web site—http://www.tillamookrainforest.org/—for more information.

New Watershed Project Management Guide

The Watershed Project Management Guide, by Thomas E. Davenport, presents a four-phase approach to watershed management based on a collaborative process that responds to common needs and goals. The four-phase approach helps watershed practitioners develop a plan consistent with the recently released USDA-EPA Watershed Management Planning and Implementation Process guidance.

To order a copy, visit http://www.crcpress.com/ and use the search box at the top right of your screen, or call 800-272-7737.
**Correction**

In the previous issue, Marmot Dam and the Little Sandy Dams on the Sandy River were both described as “90-year-old structures.” The editors apologize for any confusion from this error.

number of salmon and steelhead populations from Endangered Species Act protection because hatchery populations are robust, despite declines in naturally spawning populations.

A court decision led the federal government to review the status of all 26 populations of Pacific salmon listed under the Endangered Species Act because a judge concluded that the responsible federal agency had misinterpreted language in the act that establishes how species, subspecies, and distinct populations are protected. The judge concluded that hatchery Oregon coast coho and wild Oregon coast coho, for instance, are the same population under the act. And in Oregon’s 2003 legislative session, bills have been introduced that could further blur the distinction between hatchery and wild fish (see p. 8). Heath’s findings may complicate this debate over whether hatchery-reared salmon negatively affect wild salmon.

In a related event, Washington Congressman Norm Dicks recently introduced legislation that requires all fish reared in federally financed hatcheries, including coho, chinook, and steelhead, to be fin clipped to distinguish them from wild fish. The bill was attached to the Interior appropriations bill, which was signed by President Bush in February.

Approximately 5 billion fish are released from hatcheries around the Pacific Rim annually, and as the debate about the effects of hatchery fish on wild fish continues, marking hatchery fish in the interim is considered by many to be a good management strategy.

“We simply must adopt new and more comprehensive strategies such as this one in order to assure viable populations of fish available for harvesting, while protecting wild fish,” Congressman Dicks noted when introducing the bill.

**Estuary Research Hits New Milestone**

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to be released and travel straight out to sea, it wasn’t necessary to even consider what role estuaries played in the species’ life cycle. During the 1950s and 1960s, efforts were made to take the hatchery fish directly out to sea, avoiding the estuaries altogether.

So the condition of estuarine transitional areas, where the freshwater rivers run into the salty ocean, was seldom studied. How wild salmon used the estuaries was unknown, as were how long they lingered in the brackish water and how much they grew there before heading out to the ocean. Whether salmon stayed in the estuary after returning from the ocean, before launching their upstream spawning run, was also not carefully studied.

And the number of salmon returning from the ocean to upstream spawning grounds continued to dwindle, indicating that the production model was at least in question.

Only in the last decade has this gap in biological knowledge begun to be addressed, Bottom said. He and a team of agency and university researchers, funded by Oregon Sea Grant, have been engaged in three years of studying the estuary of the Salmon River. What is particularly noteworthy about the Salmon River estuary project is that it has been founded on an intentionally phased recovery effort. Much of the estuary land had been diked and used for cattle grazing. Those dikes have been removed systematically over the course of years, allowing Bottom and his fellow researchers to study both how the estuary repairs itself over time and how fish use the reclaimed wetlands in their varying states of recovery.

Among 11 presentations during the estuary session in Eugene, Trevan Cornwell of the Oregon Department of Fish and Wildlife reported that recognizable patterns of salmonid use of the marshes have been observed. Ayesha Gray of the University of Washington discussed the complex interaction between the quality and availability of prey resource, the fish’s ability to access the site, water temperature, and other physical features of the site that affect prey acquisition and metabolism. And Shaun Clement compared the behavior of juvenile salmonids in large and small estuaries. All the presentations were interesting, Bottom said, but that was just the start. The researchers are returning to the Salmon River estuary with the goal of finally understanding the role this transitional landscape plays in the transition of young fish to ocean-going salmon, then back from the ocean on their final upriver journey to spawn.

The significant role estuaries play in salmon life histories and salmon recovery is only now becoming known.
Calendar of Events

Fifth Annual Oregon Watershed Weeks
The fifth annual Oregon Watershed Weeks will take place from September 13 through October 19. On-line registration is available at http://www.watershedweeks.org. Watershed groups, schools, soil and water conservation districts, local jurisdictions, federal and state agencies, educational institutions and organizations, nonprofits, and friends groups are invited to schedule their outreach and educational events. For further information, contact Deb Merchant at dmerchant@4sos.org, or call 503-223-8511, ext. 6. Registration deadline is June 16.

Riparian and Aquatic Monitoring Workshop
The Student Watershed Research Project is conducting a five-day workshop August 4–8 in Forest Grove, Oregon, that will provide programmatic and technical methods to teach and conduct stream and watershed monitoring. Those with a reasonable science background who are interested in technical aquatic and riparian ecosystem monitoring programs are encouraged to attend. For more information visit http://www.swrp.org and click on “Training”; e-mail renfro@pdx; or call 503-748-1363. The workshop fee before July 15 is $500.

Applications Accepted for Trail Planning and Design
The Conservation Fund, the Eastman Kodak Company, and the National Geographic Society are accepting applications for the 2003 Kodak American Greenways Awards Program. On-line applications for the awards program, which provides important seed money to stimulate greenway, blueway, and trail planning and design, may be submitted to the Conservation Fund until June 1, 2003. For more information, see www.conservationfund.org, under “Award.” If you have questions, please contact Kodak American Greenways Awards Program, c/o The Conservation Fund, 1800 North Kent Street, Suite 1120 Arlington, VA 22209. Phone: 703-525-6300. E-mail: greenways@conservationfund.org.

River Network’s Fourth Annual National River Rally
The River Network’s Fourth Annual National River Rally will be held in Stevenson, Washington, this year, May 9–13. This conference offers workshops for those wanting to better understand, restore, and protect rivers. Workshops in leadership development, organizational development, watershed science, and other topics will be presented. For more information, visit http://www.rivernetwork.org/howwecanhelp/howrally.cfm.