

INVESTMENTS IN OREGON'S FUTURE



A COLLECTION OF
STORIES ABOUT PEOPLE
AND THEIR WATERSHEDS

THE OREGON WATERSHED ENHANCEMENT BOARD



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AND THEIR WATERSHEDS

Produced by The Oregon Watershed Enhancement Board
Salem, Oregon

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The Oregon Watershed Enhancement Board is proud to present *Investments In Oregon's Future* -- a compilation of our most important, difficult, and best work. We encourage you to read each unique story. This publication was developed so that you will understand a little more about OWEB, the projects it funds and, most importantly, the people who make the daily, consistent effort to leave a better world than they found.

Geoff Huntington
Executive Director

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BASIN INVESTMENTS

INVESTMENTS IN LOCAL RESTORATION NEEDS

The Oregon Watershed Enhancement Board's (OWEB) primary function is to administer a competitive grant program that annually underwrites \$20 million in watershed protection and restoration actions across Oregon. Almost any person, group, or local agency is eligible to apply. State and federal agencies are ineligible, but can partner with a qualified applicant. Regional panels with expertise in such disciplines as forest and range management, water quality, hydrology, and fish biology evaluate proposals, bringing their knowledge of local conditions and concerns to the evaluation process. The regional panels make recommendations on the technical merit of projects, and OWEB staff take these recommendations to the Board in the context of the program budget. OWEB funds roughly half of the approximately 400 applications it receives each year.

You will see in the basin-by-basin stories that follow common approaches to address watershed enhancement needs: eliminating barriers to fish passage, reducing erosion with its adverse impacts to upland environments and waterways, replacing invasive plants with native vegetation to benefit habitat, restoring riparian vegetation to protect stream banks, improving water quantity and quality, and enhancing aquatic habitat in rivers, wetlands, and estuaries.

Investments in Oregon's Future highlights only a few of OWEB's significant investments in each of 15 basins that make up the hydrological map of Oregon. While the project examples have been drawn from a pool of investments dating to 1997, the map below, and individual basin maps that preface each section, identify the location of projects funded by OWEB in each basin from July 2001 through December 2002.

OWEB also invests approximately \$5 million annually to conduct research and monitoring and to provide technical assistance that relates directly to supporting successful watershed restoration and protection. These investments are vital for grounding OWEB's policies and project funding decisions in the best science available, and to the successful implementation of restoration projects. These investments are not highlighted in the stories that follow, but are the foundation of the successful projects that you will read about.



Restoration projects funded by OWEB: July 2001 - December 2002.

LOCAL RESTORATION PARTNERS

In the pages to come you will read about a number of the dedicated citizens and community groups who have come together to improve the health of Oregon's watersheds. After 15 years of state and local investment in watershed restoration, streams are cleaner, native plants are being reestablished, and salmon are reappearing in streams after decades of long absences.

None of this would happen without the individuals and organizations that come forward voluntarily, and with great commitment of time, energy, and resources, to plan and implement projects that reflect local and statewide priorities about how to improve the water quality and fish and wildlife habitat in their community. Two types of organizations figure prominently in these stories and deserve recognition: watershed councils and soil and water conservation districts.

"I am honored to consider southwest Oregon my home. We have clean, clear rivers, abundant fish runs, tall trees, and independent hard working residents who cherish their freedom and are always willing to lend a hand for watershed restoration projects."

- Harry Hoogesteger
Coordinator, South Coast Watershed Council

WATERSHED COUNCILS

Watershed councils are local, voluntary, non-regulatory groups organized by area citizens to improve the ecological and economic condition of their watershed as a whole. Watershed councils bring varied community interests together in a non-regulatory setting to form a common vision for the ecological and economic sustainability of their watershed. Councils work across jurisdictional boundaries and across agency mandates to look at the watershed holistically.

To become eligible for state funding, a watershed council's formation must be approved by a local government. The two primary guidelines are that the council must: 1) be locally based and voluntary, and 2) represent a balance of interested and affected persons within the watershed. Watershed councils represent the face of a community. Depending upon the community, watershed council members usually include representatives of agriculture, the timber industry, the fishing industry if the council is on the coast, local government, business, and public interest groups. Typical activities for Oregon's councils include conducting a watershed-wide assessment to identify current conditions in light of historical functions, developing a prioritized action plan for the watershed, performing outreach to enlist and maintain community and landowner support, and implementing watershed projects consistent with the council's action plan. For a complete listing of watershed councils in Oregon visit www.oweb.state.or.us.

SOIL AND WATER CONSERVATION DISTRICTS

Oregon's 45 soil and water conservation districts (SWCDs) are local government agencies that identify natural resource problems within their boundaries. They also coordinate delivery of financial and technical assistance from federal, state, and local agencies for conservation activities on agriculture, forest, and other lands. Districts conduct assessments of natural resource conditions, provide education and public information, conduct outreach, and work with landowners and managers, community groups, and citizens. Districts help landowners identify, plan and implement strategies that reduce soil erosion, protect and improve water quality, enhance wildlife habitat, and address other natural resource concerns. Districts are led by an elected board of directors drawn from area landowners who serve without pay. More information about SWCDs is available at www.oda.state.or.us or www.oacd.org.

OWEB provides some of the funding that supports the capacity of councils and districts to improve water quality and fish and wildlife habitat. For the 2001-03 biennium, Lottery funds provided approximately \$4.8 million to support the capacity of councils and districts to work with landowners to plan and implement watershed restoration and education in their community. While the Oregon Department of Agriculture oversees district funding, OWEB provides additional capacity support to both watershed councils and SWCDs through administrative expenses (not exceeding 10 percent) allowed in each restoration grant awarded by OWEB, and through federal grants.

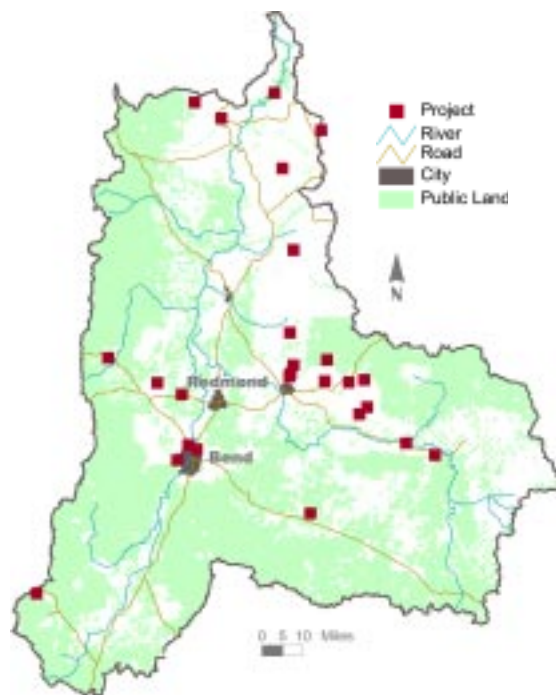
"I love the incredible diversity of the landscape: Within twenty miles, I can feel like I've traveled across the entire United States - through the desert to rainforest, mountains and shore, to farmland, glaciers, and fertile valleys. The landscape here is romantic, with the mountains rising straight up from a river that is more an inland sea."

- Jennifer Clark
Wasco County Soil and Water
Conservation District



DESCHUTES BASIN

Bordered by the Cascade Range to the west, the Deschutes Basin is noted for its Lava Lands, high Cascade lakes, wild and scenic waterways, and a rapidly growing human population. Tourism, agriculture, forestry, ranching, and high technology dominate the basin's economy. The Deschutes River hosts world famous trout and steelhead fisheries. The Confederated Tribes of the Warm Springs Reservation operate Kah-Nee-Ta Resort, a lumber mill, and other tribal enterprises. Pelton, Round Butte, Ochoco, and Prineville dams generate electricity and block fish runs to the upper basin. Bull trout and steelhead are listed under the federal Endangered Species Act. Fed by snowfields of the Cascade and Ochoco ranges, the basin's headwaters flow through high-elevation wet meadows and lava plains before dropping through scenic canyons and shrub steppe. Irrigated agriculture, rangeland, and wheatlands lie along the Lower Deschutes.



Basin Facts

Population (2000)	159,047
Cities over 10,000	2
Area (square miles)	6,886,142
Watershed Councils.....	7
SWCD's	6

State or Federal Listed

Plants Species	7
Animals Species	3

NEIGHBORS UNITE TO RESTORE WATERSHED

Buck Hollow Watershed Enhancement

Native grasslands that covered Buck Hollow until the mid 1800s protected soils from erosion, kept fish streams healthy, and stored water for slow release through the dry summer months. One hundred and fifty years later, now aware of the harmful impacts of 19th century sheep and cattle grazing practices, the landowners of Buck Hollow joined with the Wasco County Soil and Water Conservation District (SWCD) in an ambitious effort to restore the entire watershed. The main catalyst for the Buck Hollow Watershed Enhancement Project was stopping the periodic flash floods that occurred in the disturbed landscape. The flash floods eroded hillsides, damaged remaining native vegetation, destroyed fish habitat, and drained the uplands that would otherwise store and slowly release water through late summer, when it is most needed.

With a series of grants from state and federal agencies including \$440,355 from OWEB and its predecessor, GWEB,



and financial and in-kind contributions from more than 50 participating landowners, the Wasco County SWCD worked with Buck Hollow landowners to restore proper watershed function, reduce runoff and erosion, lower peak flows, and increase water quantity late in the season. In less than 15 years the project has made remarkable progress toward improving water quality and restoring watershed function. The most gratifying sign may be that every year since the project began, steelhead spawning counts have increased, holding the promise of flashing fish, instead of flash floods, for the next generation of Buck Hollow's families.

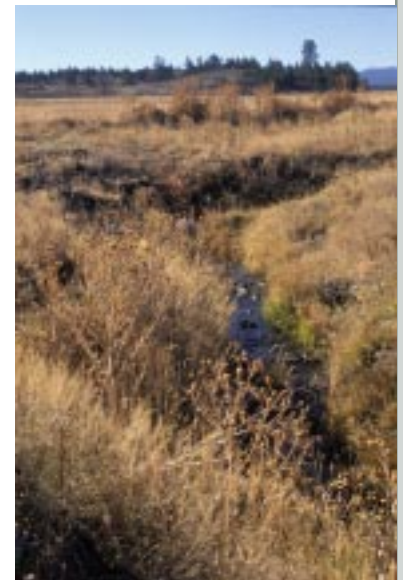
STOPPING INVASIVE WEEDS IN THEIR TRACKS

Crooked River Weed Management

In the Crooked River Basin, Scotch thistle, Spotted knapweed, and other alien plants have little or no natural biological controls to keep them in check. In natural areas weeds crowd out the indigenous grasses and shrubs that provide food for native animals, stabilize soils, and recharge groundwater supplies through their root systems. On agricultural lands the invaders rob precious irrigation water and force farmers and ranchers to use additional herbicides, resulting in untold financial and environmental



costs. OWEB's grant of \$19,948 will enable the Crooked River Weed Management Association to launch an aggressive weed management strategy and involve willing landowners in the Oregon Department of Agriculture's grant program that pays for noxious weed control on private lands. Farmers and conservationists agree that the timely action made possible in part by OWEB's investment will save money, effort, and the environment by preventing a weed crisis before it gets out of control.



Weeds like Scotch thistle can degrade water quality and reduce water quantity in streams.

“We have been very pleased with the technical and cost-share assistance that we have received through this coordinated weed management effort. Without this assistance, we would not have succeeded to the degree that we have, but would have been years further behind trying to control noxious weeds on our land. We plan to continue giving a 110% effort to eradicating noxious weeds and getting the land back to a more productive use.”

- Phil Moerschell, Project landowner

SMART WATERING TO SAVE A STREAM

Fryrear and Cloverdale Irrigation

OWEB's investment of \$220,983 helped a partnership of farmers and conservationists advance their goal of maintaining year-round stream flows while improving water quantity and reliability for agriculture. The Squaw Creek Irrigation District, Deschutes Resources Conservancy (DRC), and Deschutes Soil and Water Conservation District (SWCD) installed irrigation pipe to replace the Fryrear and Cloverdale irrigation ditches. A majority of the water used in the Deschutes Basin supports agriculture. The Squaw Creek Irrigation District diverted water from Squaw Creek into earthen ditches to irrigate crops and water livestock. An estimated 35 to 45 percent of the water diverted was lost to evaporation and seepage, a problem that is particularly acute because of the fractured basalt underlying much of central Oregon. In some cases, farmers must divert 50 percent more water than they need to ensure that the right amount of water eventually reaches their fields. For Squaw Creek, which runs through the town of Sisters, this meant that by late summer the creek would run low, even going completely dry in some reaches.

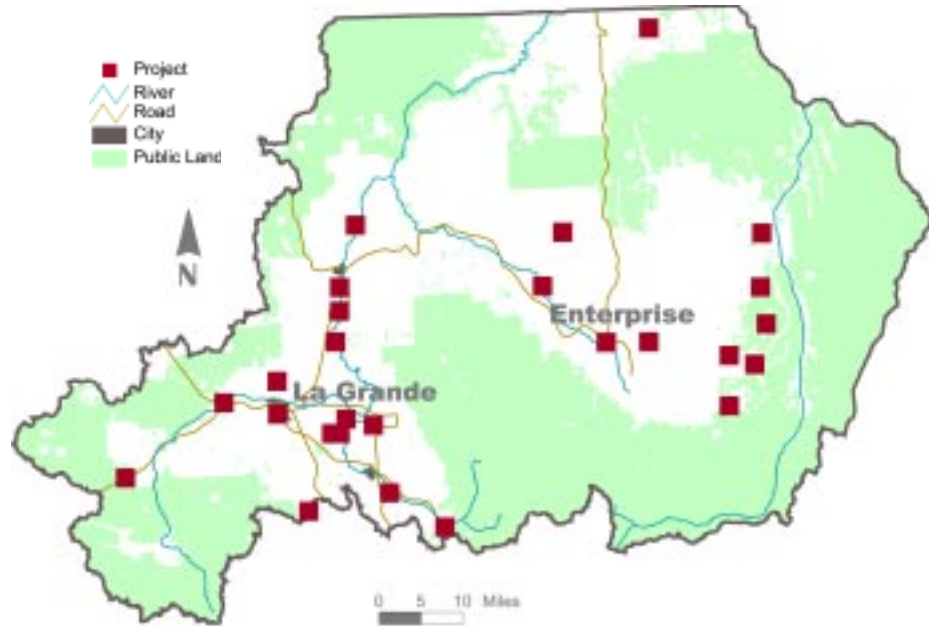
Thanks to this project, six cubic feet per second of water previously lost to seepage is now available for fish and farmers to share. Under OWEB's agreement with the irrigation district, the DRC, and the Deschutes SWCD, three additional cubic feet per second (cfs) of water will stay in Squaw Creek to ensure that fish have enough water to survive, and the irrigation district has an additional three cfs of water for farmers.





GRANDE RONDE BASIN

This basin includes the Wallowa, Grande Ronde, and Imnaha rivers, flowing from the majestic Wallowa Mountains to the Snake River. Ranching, agriculture, and forestry are key to the economy. Wallowa Lake and the Wallowa Mountains frame the Grande Ronde Valley. This basin is the historic homeland of the Nez Perce Tribe. Nestled between the Imnaha and Grande Ronde rivers, Zumwalt Prairie supports the highest density of raptors in Oregon. Spring chinook salmon and summer steelhead in this basin are listed as threatened under the federal Endangered Species Act. Mountain headwaters amidst pine forests transition through deep canyons and meander through agricultural communities in the lowlands before flowing through deep canyons to join the Snake River.



Basin Facts

Population (2000)	30,971
Cities over 10,000	1
Area (square miles).....	3,125,912
Watershed Councils.....	1
SWCD's	2

State or Federal Listed

Plants Species	9
Animals Species	5

MAKING A DIFFERENCE WITHOUT MAKING THE NEWS Rock Creek Sediment Reduction

Most large OWEB investments end up making the news. It may be a notice in a community newsletter, a write up in the local press, or a feature on the evening news. But there is a category of smaller projects that often don't get the attention they deserve. These are efforts like the Rock Creek Sediment Reduction and Road Rehabilitation Project. Fairly small in size and scope, such projects create a positive environmental impact that, if duplicated around the state, would be very newsworthy. OWEB's 1999 grant of \$7,565 to the Wallowa Soil and Water Conservation District paid to relocate part of a landowner's road from the bottom of a draw and away from Dry Creek, a main tributary to the Wallowa River. The entire road was engineered to control erosion and the abandoned road was allowed to revegetate. Less sediment now enters the stream, and overall water quality and fish habitat are improving. When you imagine hundreds of projects like this around the state, the cumulative benefit to water quality and human health is striking.

TEACHING THE NEXT GENERATION

La Grande High School Project

La Grande High School students took their schoolroom skills into the outdoors, and the Grande Ronde watershed has benefited. Students investigated the biological, social, and political issues involved in watershed and forest management using survey data from Sheep Creek and pre-forestation data from Rebarrow Experimental Forest. Sheep Creek flows into Rock Creek, which in turn flows into the Grande Ronde River. After designing restoration and enhancement plans for the watershed and forest study sites, they implemented and monitored projects over a two-year period. Successive classes of students will evaluate the effectiveness of the enhancement projects each school year in the fall and spring. Students will develop outreach materials and possibly a web page to describe the project's history, methods, data analysis, and findings. The 1998 grant of \$9,960 by OWEB's predecessor, the Governor's Watershed Enhancement Board, will yield dividends far into the future, as a new generation of students takes an understanding of watershed health into their careers and community.



La Grande Middle School students planting native trees.

“In the 7th grade, we helped preserve and save the Sheep Creek environment. It felt good to know that I did something for our community and the Earth.”

-Cyndi Carter (7th Grade Student at La Grande Middle School)

TARGETING WATER POLLUTION

Yost Water Quality Improvement Project

The Yost family ranch was already an active participant in conservation practices when the family decided it was time to address a problem common to many waterways in Oregon: pollution of Oregon rivers by animal waste carried by runoff water and snowmelt into nearby streams. On the Yost property, runoff was carried from a hilltop feedlot to nearby Farmers Ditch, which conveys water flows around the valley for downstream users of stockwater before the outfall enters Prairie Creek, a tributary of the Wallowa River. The Wallowa County/Nez Perce Tribes Salmon Recovery Plan identifies changes to animal feeding operations as a high priority in order to reduce high coliform bacteria counts and related sediment in area waterways. The Yost Ranch had already installed riparian fencing to control livestock grazing where Prairie Creek runs through the property, planted streamside vegetation to reduce

erosion, and installed sprinkler systems to improve water efficiency. While the landowner wanted to move the feeding operation away from the ditch, that would mean developing an alternative source of water, as well as extending an access road and installing new watering and feeding infrastructure. In 2001, with the help of the Wallowa Soil and Water Conservation District, a \$57,981 OWEB grant, federal agency support, and \$43,000 of the landowner's own cash and in-kind investment, the Yost Ranch feedlots found a new home nearby, and brought improved watershed health to the area.

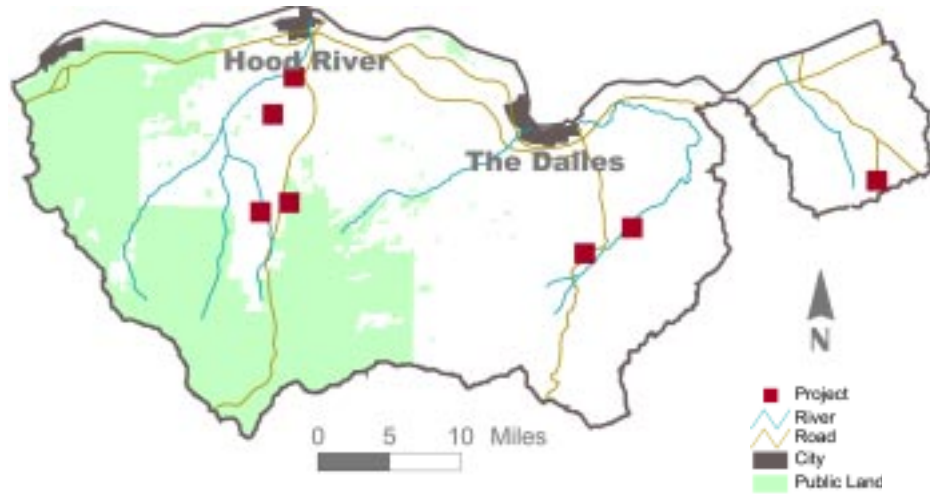


The Yost feedlot on Farmers Ditch prior to relocation away from the waterway.



HOOD BASIN

Draining directly from Mt. Hood's glaciers, Hood River and Fifteen Mile Creek are the primary Oregon waterways entering the spectacular Columbia River Gorge. Efforts are underway to reintroduce spring chinook to the Hood River. The Gorge attracts thousands of visitors annually and is world famous for its windsurfing. The Hood River valley is known for its pears and other orchard crops, while the Fifteen Mile Basin is the edge of wheat country and is a major cherry producing area. Agriculture, forestry, and tourism support the economy of this basin. Hood River and The Dalles are the principal communities along this present day and historic travel and trade route between inland regions and the coast.



Basin Facts

Population (2000)	42,240
Cities over 10,000	1
Area (square miles).....	745,844
Watershed Councils.....	5
SWCD's	3

State or Federal Listed

Plants Species	12
Animals Species	2

RETURNING THE STREAM TO THE FISH

Evans Creek Fish Passage and Water Quality

In 2000, the Hood River Watershed Council saw an opportunity to dramatically improve the water quality and fish passage potential of Evans Creek, and found a willing partner in the Middle Fork Irrigation District. The district had long used Evans Creek as a natural irrigation ditch, piping glacial water and its load of glacial silt from a nearby basin, and sending it a few miles downstream before diverting the water at two points to its customers. Based on an assessment of watershed problems, the council identified the removal of the diversion dams as a high priority for eliminating barriers that kept coho salmon, endangered steelhead, and other fish from upstream habitat. Just as important was restoring Evans Creek to a clear water stream by eliminating the glacial silt that was polluting more than five miles of the stream and causing problems for fish spawning and rearing. With a \$76,000 grant from OWEB, the district installed five miles of irrigation pipe and removed two diversion dams. Besides restoring fish passage and improving water quality in Evans Creek, the project will maintain affordable and reliable water supplies for the basin's important orchard industry and others.

A HOMEGROWN INNOVATION

Farmers Irrigation District Fish Screen

Since the 1950s, farmers have installed fish screens to prevent the startling sight of juvenile fish in the midst of agricultural fields, diverted there along with irrigation water. However, fish screen technology has left much to be desired, because it failed to exclude smaller fish and presented an array of maintenance problems. Between 1999 and 2001, OWEB provided \$200,000 to the Farmers Irrigation District, which diverts 80 cubic feet per second of water from the mainstem of the Hood River, to assist in the development and installation of a groundbreaking new fish screening device. District staff designed and patented a high-velocity horizontal fish screen that is self-cleaning with no moving parts. The screen meets, and in some cases, exceeds strict federal and state fish screen criteria to exclude juvenile fish. The new \$1.3 million screen will replace a 40 year-old drum type fish screen. Because primary spawning and rearing habitats for threatened bull trout and steelhead are located in Hood River tributaries upstream of the diversion, survival rates for juvenile migrating fish will improve immediately as a result of this project. The District plans to manufacture more screens of this type in Hood River, employing local citizens and selling the improved fish screens to other irrigators in Oregon and on the West Coast.



The Farmers Irrigation District manufactured an innovative new fish screen that excludes juvenile fish from irrigation ditches and requires less maintenance.

TRANSFORMING A LANDSCAPE

Fifteenmile Creek Watershed



Erosion on Fifteenmile Creek, prior to restoration.

address the erosion problems. With the help of \$95,300 in OWEB funding, the partnership has provided financial incentives to landowners to convert 1,800 acres of dryland wheat crop to no-till (direct seed) fall planting, and to adopt best management practices on an additional 1,300 acres, including strip cropping to ensure year-round vegetative cover, terraces, water and sediment basins, grassed waterways, and vegetative buffers and filters. Changing the agricultural landscape in the Fifteenmile Creek watershed will help farmers prevent soil loss from their land, improve water quality in the streams, maintain crop yields, and benefit the easternmost run of wild winter steelhead in the Columbia Basin.

With average rainfall of only 10 to 12 inches per year, agriculture in the Fifteenmile Creek watershed is dominated by wheat grown in a two-year cycle. Wheat is planted in the fall and harvested the following summer. The next year, the land then lies fallow to recharge soil moisture. Heavy rains and wind can cause severe erosion during the fallow season, when the soil is not protected by a crop. The sediment clouding the watershed's streams is harmful to threatened winter steelhead and has prompted the stream's inclusion on the state's list of degraded water bodies. In 1999, the Wasco Soil and Water Conservation District, Fifteenmile Watershed Council, local high school students, and state and federal agency staff formed a partnership to



Restoring uplands on Fifteenmile Creek reduced erosion and runoff.



JOHN DAY BASIN

This basin includes the Painted Hills, John Day Fossil Beds National Monument, Strawberry Mountain Wilderness, and one of the most significant undammed stream systems in the West. The economy is dependent on natural resource industries: forestry, ranching, and mining. Spring chinook are relatively healthy, but summer steelhead and bull trout are listed under the federal Endangered Species Act. Nearly 40 percent of the basin is public land. Ponderosa pine forests in the Ochoco and Blue mountains dominate the headwaters of the basin. The North and Middle forks of the John Day meander through open meadow and prairie ranch land. The mainstem of the river below the town of Spray flows through an incised canyon that bisects shrub-steppe and wheat ranches in the uplands before flowing into the Columbia River at the eastern end of the Columbia Gorge.



Basin Facts

Population (2000)	11,690
Cities over 10,000	0
Area (square miles)	5,076,758
Watershed Councils.....	6
SWCD's	5

State or Federal Listed

Plants Species	6
Animals Species	5

IMPROVING A BIRD'S-EYE VIEW

Gable Creek Ranch Riparian Improvement

Landowner Dave Fisher is fortunate to have good flows of clean water much of the year in Gable Creek, which runs through his cattle and pheasant hunting ranch before flowing into the John Day River. Besides providing excellent game bird habitat, the watershed has the potential to provide prime spawning and rearing habitat for endangered summer steelhead and other fish. Formerly, in late summer, the lower reaches of Gable Creek had extremely low flows and occasionally became dewatered, stranding fish and blocking passage. Irrigation water diversions blocked fish passage farther up the creek. The winter storms of 1996-97 flushed large loads of sediment down the waterway, eroding and collapsing the stream banks in several sections. In 2001, with the help of a \$68,800 grant from OWEB, Fisher partnered with the Oregon Water Resources Department and Department of Fish and Wildlife, and the Wheeler Soil and Water Conservation District to implement a project to address these problems. Fisher and the federal government provided additional funds. The project increased water quantity and quality by replacing earthen irrigation ditches with piping, reducing water loss from seepage by 20 percent, and improving water use efficiency by 15 percent. The project also replaced the diversions that posed barriers to fish passage, and vegetated 23 acres of eroding riverbank along three and one-half miles of Gable Creek. These days, the view from Gable Creek Ranch takes in a healthier watershed for pheasants and fish.

EFFICIENCIES HELP FISH

Rudio Creek Streamflow Restoration

The lower portions of Rudio Creek, a tributary of the North Fork John Day River, are privately owned by two landowners, the Campbell Livestock Company and the Rudio Ranch. The ranchers irrigated their land for pasture, and by June of most years, diversions to meet both landowners' senior water rights meant insufficient water to support fish, including chinook salmon, summer steelhead trout, and bull trout. Even when water was plentiful, push-up dams and other diversions impeded



Rudio Creek.

upstream fish access. Wanting to remedy the situation, the two landowners asked the Oregon Water Resources Department, North Fork John Day Watershed Council, and Monument Soil and Water Conservation District for assistance. With the help of the council and district, state and federal agencies, Oregon Water Trust, and an OWEB grant of \$53,290, the ranch owners replaced inefficient irrigation systems and installed a pump to draw water from the John Day River. This allowed the ranch owners to remove several irrigation diversions and push-up dams. The landowners dedicated the saved water to instream flow for fish habitat, and protected that commitment with deed restrictions. Thanks to the Campbell and Rudio ranches, fish and the ranchers will benefit for decades to come.



Stan Hermens, Rudio Creek landowner.

EXPERTISE TO OPEN FISH HABITAT

Upper John Day Fish Passage Improvements

The John Day River is one of the longest free-flowing rivers in the lower 48 states, and one of two Columbia River Basin waterways managed for wild salmon and other anadromous fish. However, those wild fish could not quite make it to all of their potential habitat. The Grant County Soil and Water Conservation District wanted to tackle problems of barriers to fish passage posed by a dozen irrigation diversion structures in the upper John Day Basin. In 2000, an OWEB grant of \$143,164 paid for two part-time engineers and an engineering student to provide technical expertise to design and oversee project implementation. Funding for the implementation of the project came primarily from the Bonneville Power Administration. This ambitious project opened spawning and rearing habitat in the upper tributaries of the John Day by replacing 12 gravel push-up dams used to divert water for irrigation and stock watering, with salmon-friendly alternatives, including permanent diversions with fish passage, infiltration galleries, and pumping stations. The district's million-dollar fish passage project also included an overland flood irrigation return to improve water quality by allowing pollutants to settle out and irrigation water to cool before entering the river. Finally, the project fenced four miles of sensitive riparian areas to exclude livestock and allow the return of native vegetation. With a team of willing landowners, motivated federal, state, and local agencies, and the right know-how, wild fish now have access to significantly more spawning and rearing habitat in the upper John Day.



Prime habitat for fish, free from obstructions.



KLAMATH BASIN

The Klamath Basin has been the focus of national attention following the drought of 2000 and continuing water allocation issues. Flowing south from Crater Lake National Park, the streams and springs that form Upper and Lower Klamath Lake exit Oregon through California as the Klamath River. Extensive lakes and wetlands along the Sycan, Sprague, Williamson, and Wood rivers dominate the basin. Numerous bald eagles and immense numbers of waterfowl overwinter in the basin. Irrigated agriculture, ranching, forestry, and recreational tourism are primary elements of the economy here.

Basin Facts

Population (2000)	61,712
Cities over 10,000	1
Area (square miles).....	3,627,446
Watershed Councils.....	6
SWCD's	1

State or Federal Listed

Plants Species	12
Animals Species	4



MANAGING THE LAND FOR LIVESTOCK AND NATURE

Upper Sycan Watershed Restoration

The wetlands of the Sycan Marsh drain the eastern mountain slopes of Winema National Forest, and are one of the largest wetland meadow regions in the Pacific Northwest. In 1980, when The Nature Conservancy purchased the ZX Ranch in Sycan Marsh, among its goals was determining whether cattle ranching and a healthy ecosystem could coexist. Today, the Conservancy and ZX Ranch jointly manage the land for restoration and cattle grazing. Controlled cattle grazing and other restoration projects have succeeded in bringing back these extraordinary wetlands.

OWEB's grant of \$278,355 is helping to restore the historic hydrologic function to approximately 5,000 acres of the marsh by filling and revegetating an enormous ditch built to drain the wetlands. The restoration is expected to benefit the entire 25,000-acre wetland, with significant improvements to wildlife habitat, enhanced natural filtering functions, and increased late-season water flows in the Sycan River. This will, in turn, benefit water quality and quantity in Sprague River and Upper Klamath Lake.



Protected wetlands in the Sycan Marsh, headwaters to the Klamath Basin.

OPENING THE WAY TO THE RIVER AND RECREATION

Agency Creek Dam Removal

The Wood River is one of the most productive watersheds for redband trout in the Klamath Basin. Due to the removal of Agency Creek Dam, native fish now have access to spawning and rearing habitat in the upper third of Agency Creek. Not only did the dam pose a barrier to fish passage, its partial failure years ago sullied the water and habitat with sediment and threatened more discharges during periods of high water flows. OWEB's \$95,040 grant in 2001 helped the landowner, Fort Klamath Properties, fund the removal of this primary fish passage barrier in the Wood River system. The project also returned the historic stream channel to its natural meander, restored fringe wetland and riparian habitat, increased water holding capacity, and helped strengthen the economic diversification that has added recreation and tourism to the region's agricultural base.



The Wood River.

RESTORING RIVERSIDE WOODLANDS AND WETLANDS

Ridgeway Wetlands Restoration

Dan and Kathy Ridgeway don't consider themselves environmentalists. They simply saw a problem on their land and decided to do something about it. Decades of intensive agriculture and livestock grazing along the Sprague River eliminated almost all of the original riverside woodlands and wetlands. Sediment from eroding river banks and animal waste runoff significantly affected water quality, while levees and drainage ditches prevented the reestablishment of wetland habitat. The Ridgeways enrolled their land in the federal Wetlands Reserve Program, which provides financial assistance to farmers who place environmentally sensitive acreage under conservation easements. With that step, they eliminated grazing from 80 acres of floodplain habitat. They needed additional funding to undertake an ambitious effort to restore two and one-half miles of riparian habitat and 130 acres of wetlands. A \$73,150 grant from OWEB in 1999 supported the first phase of the project, with several federal agencies providing additional financial and technical assistance, and high school students volunteering for tree planting. OWEB contributed an additional \$359,000 to the project in 2002 to support reestablishment of 80 acres

of wetlands along this stretch of the Sprague River. The wetlands will capture and filter sediments and nutrients, reduce flooding by accommodating higher flows, absorb water that slowly releases during the dry season, and raise groundwater tables, lessening the need for pasture irrigation. As the Ridgeway's project has taken shape, neighboring landowners are starting to express interest in undertaking similar efforts. The significant improvements to wildlife habitat on the Ridgeway's land may soon be evident through much of the Sprague River watershed.

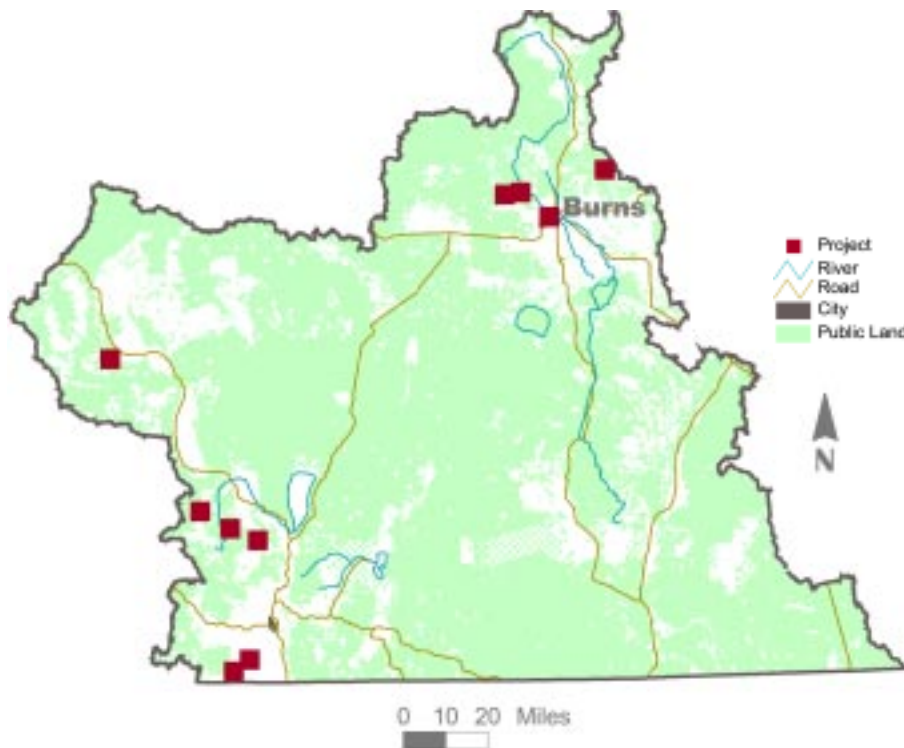


Aerial photo of Ridgeway wetlands project.



LAKES BASIN

Waters that flow in the desert country of Lake, southern Harney, and southwestern Malheur counties drain toward Warner, Malheur, Abert, Goose, Silver, and Summer lakes. These waterbodies and associated wetlands are remnants of ancient Pleistocene lakes that once filled the basin. Scenic mountains rise abruptly from the valley floors. Streams that drain the uplifted ranges support Lahontan cutthroat trout, redband trout, tui chub, Alvord chub, and Borax Lake chub. Hart Mountain and Malheur National Wildlife refuges and the Steens Mountain Wilderness Area provide wildlife viewing and scenic vistas. Fort Rock and the Alvord Desert are home to antelope and sage grouse. Diamond Craters, the historic Round Barn of the P Ranch, forest products, and the Burns Paiute tribal lands are in this basin. Ranching principally supports communities in this basin.



Basin Facts

Population (2000)	10,098
Cities over 10,000	0
Area (square miles)	11,638,073
Watershed Councils	5
SWCD's	3

State or Federal Listed

Plants Species	12
Animals Species	8

REVERSING THE LEGACY OF FIRE SUPPRESSION

Kiger Watershed Enhancement

In the Kiger Creek drainage, as in many western landscapes, juniper encroachment is the legacy of decades of fire suppression. In this watershed within the Donner und Blitzen subbasin near Steens Mountain, Fred Otley, a landowner in the area, identified an opportunity to reestablish stands of quaking aspen and communities of mountain big sagebrush and bunchgrass as wildlife habitat and forage. Increasing water quantity and improving water quality in the creek by replacing the water-hogging junipers with native grasses and shrubs was another important goal. A 1999 grant from OWEB for \$63,300 provided a third of the funding needed by the Harney County Watershed Council and landowners to implement the first phase of a comprehensive effort to restore the complex mosaic of plant communities that existed before the era of fire suppression. Fittingly enough, reintroducing fire through careful prescribed burning was the best option. The project area covered 7,000 acres owned by Mann Lake Ranch, Otley Brothers Ranch, and the Bureau of Land Management. Participation of all of the property owners was essential for this landscape-scale effort. Preparations included foregoing grazing to allow fine fuels to build up in some areas, heavy grazing for fuel reduction in riparian areas, and juniper cutting and thinning to provide the fuel needed for the 2001 fall and winter burns. These preparations were complemented by monitoring before, during, and after the prescribed burns to ensure that a scientific understanding of project impacts informs later phases of this project and similar efforts elsewhere. With landowner initiative and cooperation, and a commitment to good science, fire is being restored as a positive force for shaping Oregon's landscape.

INCREASING WATER QUANTITY BY REMOVING JUNIPER

Urizar Juniper Removal

While juniper is a species native to the West, it has spread significantly beyond its historic range due to a century of fire suppression. Juniper populations that would have been regularly cleared by periodic fires are now evenly aged 80 to 100-year old stands. In the right place, rimrock and shallow soils, juniper is an important part of many landscapes, providing diversity and habitat. By moving beyond its historic range, juniper has profoundly affected the hydrology of many parts of central and eastern Oregon. Juniper sequesters an enormous amount of water that would otherwise remain in the system to be used by other plants, animals, and people. Under these conditions, juniper removal dramatically increases water quantity in a system and promotes diverse native



Removing juniper increases the water available to other plants and animals.

vegetation. This was the case on the Urizar property, where OWEB's grants in 1999 and 2001, totaling \$50,300, financed most of the juniper removal. Administered by the Harney Soil and Water Conservation District, this project reduced 75 to 100 juniper trees per acre by 90 percent. This allowed the reestablishment of native bitterbrush, mountain mahogany, and ponderosa pine on 1,200 acres in the Silvies River watershed. By allowing the resurgence of native vegetation, the Urizar project increased water quantity in a place where water is scarce, and helped to restore a natural balance to the landscape.

LEARNING TO RESTORE A LIFELESS HABITAT

Drews Creek Stream Restoration and Education Project

Lakeview High School biology teacher Clair Thomas was already well respected for his use of environmental education to engage students when he applied to OWEB to fund the Drews Creek Restoration and Education Project. Drews Creek was excessively grazed until 1994, and had been used as wintering ground for cattle, leaving the waterway wide, shallow, warm, and silted. Its banks were eroded, cut 12 to 15 feet deep at regular intervals, and stripped of most vegetation. In 1998, as part of their high school science curriculum, Lakeview and Union High school students began complementing their classroom



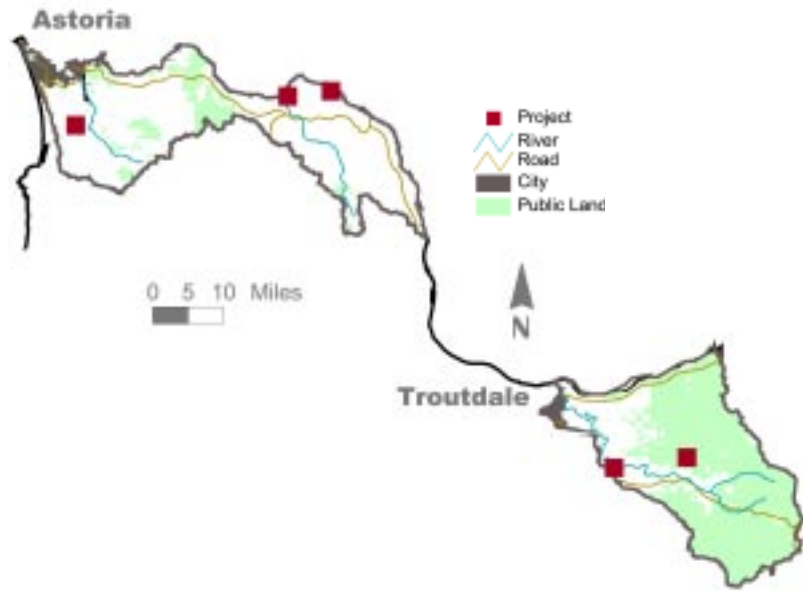
Lakeview High School students restoring Drews Creek.

science work with hands-on stream restoration efforts at the creek on a conservation easement owned by the Oregon Department of Fish and Wildlife. They received a \$16,498 OWEB grant and financial and in-kind support from a partnership including the schools, local businesses, a conservation group, and state and federal agencies. Since the program's inception, the students have comprehensively surveyed 10 river miles of Drews Creek, completed restoration work at two sites, and monitored changes to the creek to determine whether their projects have made a difference. Thanks to the students and their teacher, where once there was a nearly lifeless creek, now there is flowing habitat for fish and a thriving riparian zone, bursting with insects, doves, and quail. Now rooted in many students is an appreciation for how people can create problems on the land, and work together to resolve them.



LOWER COLUMBIA BASIN

The region's relatively small streams drain onto floodplains and into the tidal reaches of the Columbia River. Waters flow either from the Coast Range (Skipanon, Young's, and Clatskanie rivers, Big and Gnat creeks), or from the west slope of the Cascades (Sandy River). These streams generally traverse heavily forested hillsides in headwater areas and steep valleys. Undiked areas of the floodplain support high species diversity, however nearly the entire Columbia River floodplain has been diked. Anadromous fish species listings under the federal Endangered Species Act include chum and chinook salmon and steelhead. Maritime shipping, forestry, and wood processing are key elements of the economy. Extensive hybrid cottonwood plantations occupy much of the diked floodplain.



Basin Facts

Population (2000)	97,783
Cities over 10,000	1
Area (square miles)	771,803
Watershed Councils	5
SWCD's	4

State or Federal Listed

Plants Species	10
Animals Species	3

MAKING A HEALTHY CONNECTION

Reconnecting the Westport Slough



Forty miles west of the mouth of the Columbia River, the Westport Slough historically offered migrating chinook, coho, and sockeye salmon, steelhead, and cutthroat trout a preferred shortcut to the Clatskanie River, as well as access to 24 miles of habitat in the eight streams that flow into the slough. In 1938, the depression-era Works Progress Administration plugged the slough where it entered the Clatskanie in the interest of flood control and job creation. The absence of Clatskanie River flows through the slough to the Columbia River turned it into a silt-laden, dead waterway, and also required regular dredging of accumulated silt on the Clatskanie River side of the plug. In 2000, OWEB provided \$63,250 to the Lower Columbia River Watershed Council to help fund a project to reconnect the Westport Slough to the Clatskanie River. The Council partnered with the Army Corps of Engineers, the community of Clatskanie, and other state and federal agencies to replace the plug with a twelve-foot culvert to restore water flow and fish passage between the waterways. After only two years, the water is dramatically cleaner and clearer, and to the delight of the recreational kayakers who flock to the slough, the salmon are making a comeback.

RETURNING NATIVE FISH TO THE WEE BURN

Wee Burn Stream Restoration

The Wee Burn is a creek that now meanders through the golf course at the Resort on the Mountain in Welches, on the lower western slopes of Mount Hood. Wee Burn, which means small stream in Scottish, is a tributary of the federally designated Wild and Scenic Salmon River in the Sandy River Watershed. Golf was not kind to the creek at the outset. While the course's construction in the 1920s and 1930s gave Oregon its first golf resort at the original Welches campground and hotel, in the process the Wee Burn was channelized and then dammed in three places to create irrigation ponds. For over 60 years, the wild native coho salmon and steelhead that make the Salmon River home were blocked from potential spawning, resting, and overwintering habitat in the Wee Burn. A few years after acquiring the property, Ed and Janice Hopper partnered with numerous conservation organizations, private businesses, and state and federal agencies to implement a series of improvements on the Wee Burn. In 1997, the partners received a \$50,985 contribution from OWEB's predecessor, the Governor's Watershed Enhancement Board, toward the costs of restoring the Wee Burn. This partnership added wetlands and alcoves to the once channelized stream to slow its flow and restore a natural meander. Removal of sediment from an existing pond and excavation of a new spring-fed pond provided deep, cool water as a hot weather refuge for young fish. Thousands of native shade plants and trees planted along the streambanks improved upland habitat, while 100 logs and boulders placed instream created pools and cover for resting, spawning, and rearing fish. Three new fish ladders over irrigation dams allow fish access to the upper ponds on the stream. As a direct result of this project, coho and steelhead are thriving in the Wee Burn for the first time since 1928.



Volunteers helping restore the Wee Burn.

REACHING ACROSS THE WATERSHED

Crossing Boundaries Program

For a thousand students at nine different K-12 schools, the boundaries of their education districts have been dissolved to allow them to learn in their regional watershed - the entire lower Columbia River and its estuary. The Crossing Boundaries Program uses study sites in communities scattered from western Clatsop County east to Corbett in Multnomah County. Public school teachers get support from the program in the form of training, student transportation, substitute teacher costs, supplies, and equipment. Students get hands-on opportunities to learn about water quality, wetlands, forestry, salmon, soils, watersheds, and more. Each participating school develops its own study site for use by all participants, and local students help teach visiting students about the elements unique to their sites. The program's main tool for teaching students about watershed function is a technically sound water quality monitoring program, with data collected by the students and made available to watershed councils and other interested entities. OWEB has provided grants to both the Crossing Boundaries Consortium (in 1999) and the Lower Columbia River Estuary Program (in 2001) totaling \$89,827 to help maintain and expand the Crossing Boundaries Program. Consistent with its name, the Crossing Boundaries Program gets support from many partners, including the cities of Seaside, Warrenton, and Astoria; the Necanicum, Skipanon, Nicolai-Wickiup, and Lower Columbia River watershed councils; Seaside Aquarium; Port of Astoria; Clatsop Economic Development Council; Portland State University; and the Columbia River Estuary Study Taskforce. By crossing boundaries, Oregon will educate a generation of students about watershed function, and will create a generation of citizens able to contribute positively to natural resource decisions wherever they reside.



NORTH COAST BASIN

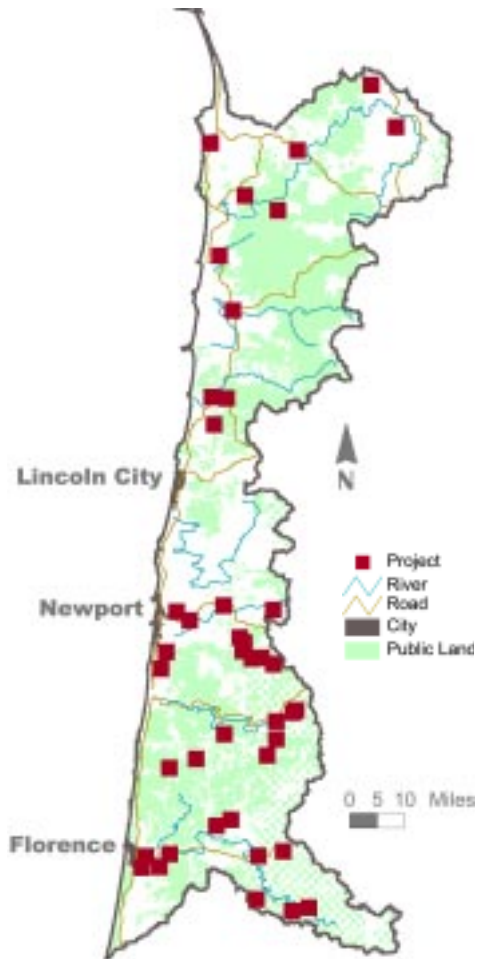
Through its eight modestly sized, unobstructed tributaries to the Pacific Ocean, the North Coast Basin supports coho and chinook salmon, cutthroat trout, and steelhead. Coho salmon in this basin are currently listed as threatened under the federal Endangered Species Act. Fall chinook runs are relatively healthy and support world famous fisheries. Douglas fir and western hemlock forests of the coast range support a strong forest industry. The Tillamook State Forest, site of the legendary 1933 Tillamook Burn has largely recovered. Rivers in this basin are underlain by basalt or sandstone geology with lush forest cover, and are primarily privately managed. The Tillamook County Creamery supports a strong dairy industry in the Tillamook Bay and Nestucca drainages. Estuaries often host recreational fishing and some are a home base for commercial fishing fleets.

Basin Facts

Population (2000)	103,224
Cities over 10,000	0
Area (square miles)	2,759,108
Watershed Councils	8
SWCD's	8

State or Federal Listed

Plants Species	10
Animals Species	6



MAKING DOLLARS COUNT

Mid-Coast Rapid Bio-Assessment

A hallmark of Oregon's salmon recovery program is its emphasis on grounding salmon protection and restoration efforts in science. For the Mid-Coast Watersheds Council, this meant implementing a carefully designed snorkel survey of juvenile salmonid abundance and distribution in the Yachats, Alsea, Yaquina, Siletz, and Salmon rivers. The survey focused on threatened coastal coho salmon that spend the first 18 months of their lives in freshwater. Systematic snorkel surveys of 400 miles of streams in the five watersheds identified the most viable populations of salmon and steelhead, assessed the quality and use of habitat and located barriers to fish passage. With a total of \$265,346 in funding provided in 1998 and 1999 by OWEB and its predecessor, the Governor's Watershed Enhancement Board, results from the council's Mid-Coast Rapid Bio-Assessment are helping to focus recovery dollars where they will have the most benefit to salmon.

MAKING THE CREEK'S ACQUAINTANCE AGAIN

Boxler Creek Fish Passage



Fish passage was blocked on Boxler Creek by two culverts.

Thirty-five years ago, a road was built over Boxler Creek. Two undersized culverts were laid side-by-side to pass the creek under the road. Looking like the business end of a double-barreled shotgun from a fish eye perspective, the culverts shot Boxler Creek's flow downstream, eroding the streambed and creating a five-foot drop to the streambed, a barrier returning salmon found to be impassable. Restoring fish passage to high-value salmon habitat is identified as a high priority in the Upper Nehalem Watershed Council's Action Plan. In consultation with a local timber company and state and federal agencies, the council worked with the community of Fishhawk Lake to design and implement a solution to the fish passage barrier created by the culverts. In 1999, OWEB provided \$38,740 in funding to the council for a project to restore fish passage to Boxler Creek. The group determined that replacing the existing road and culverts with a bridge would be the most cost-effective long-term solution, and the best way to restore the creek to its naturally functioning condition. The council and its community partners installed a railcar bridge and restored the stream's historic contour and riparian vegetation. The result is a naturally flowing stream that, within months of project completion, welcomed home its first coho in decades. Every year since, 30-40 adult coho have been observed spawning above the bridge. Having started restoring Boxler Creek's salmon, the community went a step further to celebrate their accomplishment by constructing a park around the bridge where they gather to watch coho and steelhead pass through once impassable waters.

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Boxler Creek now provides fish passage after installation of a bridge.

ENGAGING CITIZENS IN CIVICS AND THE ECOSYSTEM

Seaside Estuary and Watershed Discovery Program

The City of Seaside has an inventive way of communicating the wonders and challenges of its coastal environment to residents and visitors while giving its citizens the information they need to participate in important land use decisions. Since its inception in 1996, the city's Estuary and Watershed Discovery Program has developed a comprehensive education program that includes sites for hands-on activities around the Necanicum watershed. The program includes a walking trail with interpretive signs in the 50-acre Neawanna Natural History Park, canoe tours, plankton and invertebrate sampling stations, and onsite and classroom presentations. These activities educate participants about the plant, fish, and animal resources in the watershed, from upland forests to salt marshes. By



providing the scientific information required to make informed decisions about growth and development in the region, the City of Seaside is achieving several state and local planning goals. The goals target effective citizen involvement, protection and restoration of natural resources, and cooperation among local jurisdictions in managing the estuary. OWEB's 2001 grant of \$22,600 allowed Seaside to expand the program from several days a week during the summer, to a year-round program that will reach 2,000 participants in formal school settings and 3,000 participants through its informal education and outreach program. For the residents of Seaside, a walk in the park is more than exercise - it is an exercise in civic and environmental involvement.



OWYHEE-MALHEUR BASIN

The upper Owyhee and Malheur River drainages are lightly populated portions of the state. The lower Malheur Basin supports productive irrigated agriculture and is particularly known for its onions. Cattle ranching is the dominant use of the upper basin, which includes the stark beauty of Leslie Gulch and the Jordan Craters. The wild Owyhee River is one of the few undammed areas in Oregon. Bull trout in this basin are listed as threatened under the federal Endangered Species Act. Salmon are excluded from this basin by the Snake River Dams.

Basin Facts

Population (2000)	31,397
Cities over 10,000	1
Area (square miles).....	6,746,140
Watershed Councils.....	3
SWCD's	1

State or Federal Listed

Plants Species	6
Animals Species	13



SAVING WATER AND SOIL ON THE SNAKE

South Board of Control Pipeline Project

The Snake River has been identified as having degraded water quality in part because of excess sediment in the river. Excess sediment can bring too many nutrients to the water, causing algae blooms, which deplete the oxygen in the water that is so vital to fish survival. An irrigation efficiency project coordinated by the Malheur Soil and Water Conservation District has achieved dramatic reductions in water usage and soil loss in the Snake River Basin, which in turn, will significantly reduce sediment in the Snake River. Landowners on seven parcels covering 868 acres agreed to replace three and one-half miles of earthen irrigation ditches with pipes, and install sprinkler and drip irrigation systems instead of continuing traditional flood irrigation practices. The magnitude of the changes is remarkable. The landowners have committed to maintaining significant additional water in the river during summer, when low flows threaten fish and wildlife. With these improvements, the district estimates an overall annual reduction to the Snake River system of 14,500 tons of sediment, fertilizers, and pesticides. OWEB's 2001 grant of \$179,000 helped the landowners make an impressive difference in water quantity and quality and fish habitat in the Snake River.

IMPROVING WATER QUALITY THROUGH WETLANDS

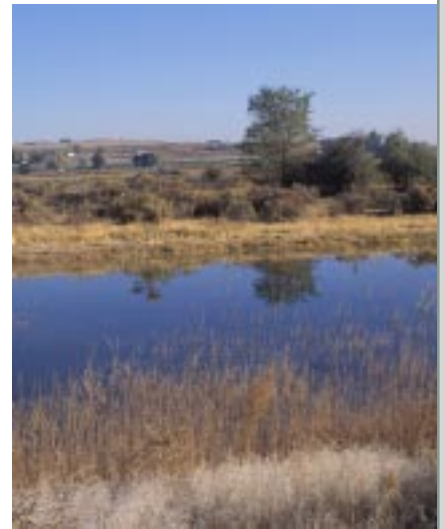
Three P's Farm Water and Habitat Improvement

The Three P's Farm along the Snake River is strategically located at the end of an irrigation canal serving area farms; it is the last land that the water flows through prior to reaching the Snake River. In 2001, OWEB provided \$87,000 to the Malheur Soil and Water Conservation District, the Owyhee Watershed Council, and the owners of the Three P's Farm to help underwrite a project reestablishing 20 acres of wetlands where the irrigation ditch meets the Snake River. The restored wetlands will decompose pesticides and herbicides and decrease nitrogen and phosphorous levels in the sediments carried by irrigation water. Besides



Newly restored wetlands treat nutrient-laden water through soil filtration.

improving water quality and fish and wildlife habitat in this reach of the Snake River, the project has a high-profile location that is ideal for demonstrating the filtering function wetlands serve to other landowners. The watershed council, the district, and the property owners, who contributed \$32,255 in volunteer service and cash, accomplished the project with support from the Boy Scouts, local schools, Pheasants Forever, and several state and federal agencies.



Newly created wetlands on the Snake River.

LANDOWNERS LEADING THE WAY

White Eason Land Restoration

Jesse and Pam White are cattle ranchers who took an interest in the way their cattle operation affects the environment. The Whites came to OWEB in 2001 with \$69,000 of their own money to invest in a project to move their feedlot a mile away from the banks of the Owyhee River. The project would allow the Whites to restore the riverbank and reduce the risk of nitrates and bacteria entering the river. OWEB provided a \$91,000 grant. The Whites, with the assistance of the Owyhee Watershed Council, the Malheur Soil and Water Conservation District, state and federal agency personnel, and the Boy Scouts, relocated their feedlot and installed piping to deliver stockwater to troughs at the new location. The Whites then fenced off the riparian area along the river, including the old feedlot, and reseeded the land with native grasses and willow trees to filter sediment, utilize nutrients, control erosion, provide shade, and retain water in the soils. Revegetating the stream bank will not only improve water quality in the Owyhee River and help implement the Agricultural Water Quality Management Area Plan, but also restore fish and wildlife habitat. People like the Whites are leaders in their community, and by restoring their own land they demonstrate to their neighbors that successful ranching operations can contribute to good stewardship of the valuable natural resources in the Owyhee Basin.



Landowner Jesse White with his sign describing the support he received to relocate his feedlot away from the Owyhee River.



POWDER BASIN

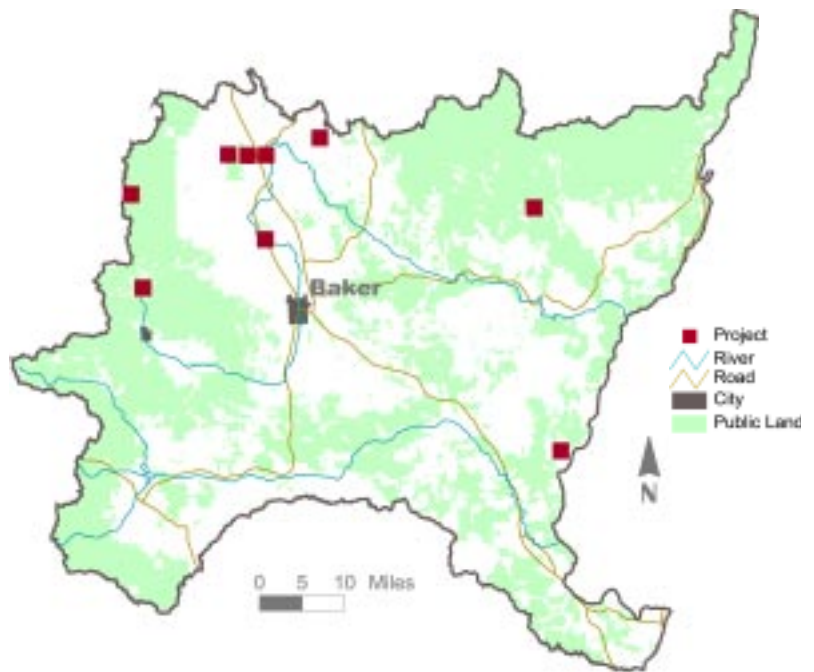
Draining south and east from the Blue Mountains, the Powder and Burnt rivers flow to the middle Snake River. The Oregon Trail traversed this basin, and wheel ruts from the wagons can still be seen today. Mining is important in this basin, but agriculture and ranching are the key elements of the economy. Bull trout in the basin are listed as threatened under the federal Endangered Species Act.

Basin Facts

Population (2000)	17,901
Cities over 10,000	1
Area (square miles)	2,207,865
Watershed Councils.....	1
SWCD's	5

The State or Federal Listed

Plants Species	6
Animals Species	6



PROTECTING A TOWN'S PRISTINE WATER

Baker City Watershed Forest Thinning

The 10,000 citizens of Baker City open their taps to receive drinking water so pure it doesn't need filtration. Only two other cities in Oregon can make this claim. The Baker City Watershed, within the beautiful Elkhorn Range of the Blue Mountains, is the unsullied source of the city's water. Eighty years of diligent protection by local government maintained a landscape of few roads, many old growth trees, and unaltered waterways. However, the protective actions also included eight decades of suppressing the frequent, low-intensity fires that historically maintained the fire resiliency of the area. Drought and spruce budworm infestations of the 1980s and early 1990s left the watershed's forests with an unusually high percentage of dead trees, compounding the fuels problem, and setting the scene for a catastrophic fire that might not only wipe out fish and wildlife habitat, but also destroy the source of 85 percent of Baker City's drinking water.

The city realized that it needed to clear the fuels built up in the forested areas of the watershed to prevent a fire that could destroy the city's watershed and drinking water source. As an area with limited access, the process of thinning trees and clearing brush to reduce fuels had to be done painstakingly by hand to maintain the roadless character of the watershed. Two grants from OWEB totaling \$66,000 to Baker City covered more than half this cost. This and the help of inmates from the Powder River Correctional Facility enabled the city to complement its admirable conservation history with a dose of modern forest health management - and keep its clean, clear water flowing to homes in Baker City.



Powder Correctional Facility inmates clearing fuels to prevent fire in the Baker City watershed. Thinned trees were cut into firewood to provide heat for local low income families.

REMEDYING A TROUBLESOME LEGACY

Cracker Creek Mining Site Restoration



In the late 1800s and early 1900s, gold mining operations proliferated in the upper Powder River Basin and many other parts of the state. When the boom times ended, left behind were numerous abandoned mining sites. Today we know that the 100-year old piles of waste rock and mill tailings are a source of contamination to the region's streams. Stormwater and snowmelt carry sediments laced with arsenic and other metals into the waters of Cracker Creek, a tributary to the Powder River, from several abandoned mines on its banks. The Eureka and Excelsior, Columbia, and North Pole mines that operated between 1891 and 1905 are

among such sites in the vicinity of Cracker Creek. In 2001, the Cracker Creek Mining Company, the current owner of the property containing these legacy mines, sought and received a \$115,600 grant from OWEB to rehabilitate the sites. With the help of the Oregon Department of Fish and Wildlife, the Oregon Department of Geology and Mineral Industries, and the Natural Resources Conservation Service, the project will improve water quality by moving the historic rock and tailing piles away from the creek and planting the riparian areas with native vegetation to prevent erosion of sediment and contaminants into the waterway.



Cracker Creek mining area after restoration.

TURNING AROUND A DOWNTOWN RIVER

Powder River Enhancement Project



The Powder River runs through downtown Baker City. This stretch of the river had been listed as severely degraded in 1990 by the Oregon Department of Environmental Quality. In 1995, a broad coalition of local, state, and federal agencies, an irrigation district, and the local schools came together to improve the channelized river, and engage the region's citizens in the process. With a total of \$76,400 in funding through two grants from OWEB's predecessor, the Governor's Watershed Enhancement Board, and nearly twice that in cash and in-kind contributions from other participants, the project partners implemented an ambitious initiative. The project partnership reestablished channel complexity by building 40 pools, enhanced

instream habitat with rock weirs and boulders to create fish resting sites, improved upland habitat by planting native vegetation in the riparian zone, reduced erosion with bank stabilization devices, and created fish passage at three irrigation diversion structures. The community saw its river become a focal point for education and involvement. The city placed interpretive signs along the restoration site, hosted River User conferences, sponsored community cleanup days, and developed educational activities for students. A mile-long section of the Powder River is now a living outdoor classroom for students of all ages, and the citizens of Baker City take pride in knowing that they have themselves to thank for the turnaround in the river's health.



ROGUE BASIN

Headwaters of the Rogue River flow from the west slopes of Crater Lake and the southern Cascades to the Pacific Ocean. This basin has an extremely complex geologic structure and corresponding vegetation patterns. From the lava and pumice of the southern Cascade volcanoes, the Middle Rogue River flows through the relatively populated Medford-Ashland area with its orchards and irrigated agriculture. Mining and forestry are also significant economic sectors in the basin. Fisheries for chinook salmon and steelhead in the Rogue are world famous. Coho salmon in the Rogue are listed as threatened under the federal Endangered Species Act. The Rogue River cuts through the Coast Range and enters the Pacific Ocean at Gold Beach, where mail boat tours take visitors upriver and salmon fishing is a yearly ritual.



Basin Facts

Population (2000)	257,914
Cities over 10,000	4
Area (square miles).....	3,210,948
Watershed Councils.....	9
SWCD's	4

State or Federal Listed

Plants Species	10
Animals Species	13



BUILDING COMMUNITY AND CONSERVATION

Illinois Valley Tree Planting

Hundreds of community volunteers have gathered annually for the last 10 years to plant native trees along the Illinois River and its tributaries. These native plantings improve riparian health and streambank stability by filtering pollutants and sediment from water draining into creeks and rivers, and by providing wildlife habitat, and shade. After the plantings, the volunteers celebrate with a chili dinner, and make signs to inform passersby about the project. The community looks forward to this annual event, and each year new volunteers take part, learning about the importance of native riparian vegetation. In 2001, over 100 private landowners participated in the planting project. OWEB's \$65,510 grant to the Illinois Basin Interest Group for this effort leveraged four times this amount in in-kind contributions and matching funds from community volunteers, the Oregon Department of Fish and Wildlife, U.S. Forest Service, Illinois Valley Soil and Water Conservation District, American Forests, Rough and Ready Lumber Company, Illinois Valley Watershed Council, and the Surdna Foundation.

SWIFT ACTION SAVES A RIVERBANK

Rogue River Restoration Project



In 2000, an exemplary public/private partnership, operating as the Rogue River Stakeholders Group, mobilized to avert a major long-term threat to the Rogue River. Thirty years of gravel mining left legally abandoned pits along a three-mile stretch of the Rogue River vulnerable to "capture" by the river during periods of high water. This process, known as avulsion, can cause rapid dewatering of natural channels, increase erosion and sedimentation, destroy riparian and fish habitat, strand fish, and flood downstream agricultural and orchard lands. From 2000-2002, the group launched an accelerated effort to take emergency actions to stabilize the riverbank. In 2002, another series of abandoned pits became threatened with capture, with the same possible destructive results. In 2002, OWEB authorized a \$283,780

grant to enable stabilization of the threatened riverbank. Once the bank is stabilized, the group will turn to implementing long-term protective actions and restoration. For this stretch of the Rogue, swift action and a strong partnership are making the difference for the river, its salmon, and the people who live, work, and play along its banks.

RESTORING A HISTORIC WATERWAY

Savage Rapids Dam Removal

For more than 20 years community and statewide advocacy groups have argued heatedly over removal of the Savage Rapids Dam on the Rogue River. The dam inhibited access to 500 miles of upstream habitat for five species of salmon and steelhead. Owned and operated by the Grants Pass Irrigation District for over 70 years, the dam is the source of irrigation water for an area transitioning from agriculture to rural residential development. After years of negotiations, the district, community and advocacy groups, and state and federal agencies reached an agreement to remove the dam, while allowing the irrigation district to continue drawing water from the Rogue using pumps. In 2002, OWEB became the first to commit funding toward the project by awarding a \$3 million challenge grant to the district for the removal of the dam and restoration of this stretch of the river. This early commitment of state funds will enable the group to more successfully pursue private and federal funding for the overall project. OWEB's investment will leverage this rare opportunity to dramatically improve returning salmon populations on the Rogue River while maintaining the community water source.

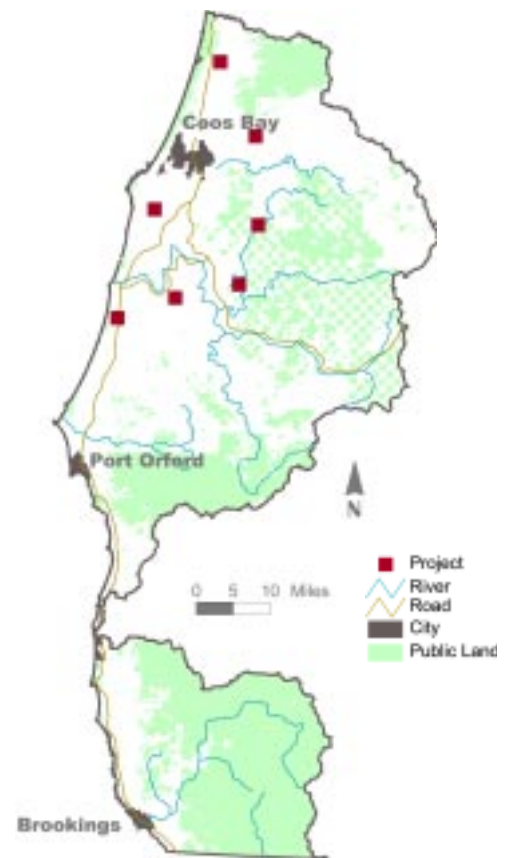


Removal of Savage Rapids Dam would improve fish passage to over 500 miles of upstream habitat.



SOUTH COAST BASIN

Two types of drainages lie in the South Coast Basin. At the north end of the basin, the medium-sized Coos and Coquille rivers begin in the Coast Range and flow to the ocean across the Coos Bay dunes. Farther south, a number of relatively smaller streams (the Floras and Hunter creeks, and the Sixes, Elk, Winchuck, Chetco, and Pistol rivers) begin primarily in the Klamath Mountains. Forestry, ranching, agriculture, commercial and recreational fishing, and tourism are significant contributors to the basin's economy. Significant portions of marine terraces in this basin have been converted to cranberry or lily production. The Coquille Valley is a cattle and dairy producing region. Several of the watersheds in the southern part of this basin were affected by large-scale wildfires during the summer of 2002.



Basin Facts

Population (2000)	83,402
Cities over 10,000	1
Area (square miles)	1,901,048
Watershed Councils	10
SWCD's	2

State or Federal Listed

Plants Species	8
Animals Species	7

BUILDING BRIDGES FOR FISH

Tenmile Lakes Fish Passage and Sediment Abatement Project



Looking to make the best use of scarce funds for an expensive undertaking, the Tenmile Lakes Basin Partnership made a persuasive case in 2002 for replacing six undersized or failing culverts with new bridges. While building bridges is more expensive than replacing culverts in the short term, in the long-term costs are lower because culverts have a shorter life span and a higher potential for failure. The long-term benefit of bridges to habitat and watershed function is also greater because they allow the stream to return to natural, free-flowing conditions. Careful site-by-site evaluations by a multi-disciplinary team consisting of watershed council members, state and federal agencies, local government, and

project-site owners determined the priority locations where improvements would have the biggest impact on opening fish passage and reducing erosion. Two additional sites were identified where a new and a repaired culvert, were the best solution to impaired fish passage. In all, OWEB's grant of \$278,731 to the partnership will help improve fish access to 20 miles of habitat on Adams, Benson, Eel, Noble, Robertson, and Wilkins creeks in the Tenmile Lakes watershed.

MORE SALMON AND STEELHEAD, STEP BY STEP

Pistol River Salmon Recovery Project

The South Coast Watershed Council is a cooperative organization encompassing nine watershed groups on Oregon's south coast between Cape Blanco and the California border and inland to the mountains of the Siskiyou National Forest. One of the oldest councils in the state, it is a model for consensus based decision making in the community. In a region historically dependent on the timber and fishing industries, the South Coast Watershed Council hires displaced fisherman and timber workers to implement its restoration projects. Projects benefit from the workers' intimate knowledge of the area, and the community benefits from increased employment. The council's Pistol River Comprehensive Salmon Recovery Project, which OWEB funded with a \$145,500 grant in 1997, typifies the way change happens on the ground in many Oregon watersheds. The council's watershed assessment and action plan identified the Pistol River system as a place where a concerted effort could reverse declines in chinook, steelhead, and trout populations and even potentially reestablish coho salmon. They recruited partners, including private landowners, the Curry County Commission and



Culvert blocking fish passage on Deep Creek prior to installation of a bridge.



Deep Creek restored to its natural flow after installation of a bridge.

Road Department, the local soil and water conservation

district, Oregon State University Extension Service, and several state agencies. Then came the thoughtfully designed array of actions, ranging from replacing a failing culvert on Deep Creek with a bridge, to placing boulders and trees for instream habitat creation, to fencing stream banks, to publicly showcasing state-of-the-art restoration through a permanent demonstration site visible and easily accessible from Highway 101. The work isn't glamorous, but these steady efforts to reduce erosion, improve fish passage, enhance habitat, educate the community, make a difference for the natural resources in this watershed, and for the people who depend on and care about them.

LINING UP TO IMPROVE HABITAT

Coquille Watershed Improvement Management Plan

Since its inception, the Coquille Watershed Association has made it a priority to enlist the assistance of landowners in restoring degraded riparian zones. The overwhelming response has resulted in a waiting list of landowners wanting to do watershed improvement projects on their land. In 1998, with a \$271,653 grant from OWEB, the association and landowners started implementing a new round of measures to restore degraded riparian vegetation, reduce erosion along the riverbanks, prevent the discharge of untreated animal waste, and address sediment runoff from roads and landings. With the association's support, landowners voluntarily fenced their cattle away from sensitive riparian areas, and volunteers and displaced timber and fishing industry workers planted stream banks with native trees and vegetation. Roads were upgraded or decommissioned, and an off-channel pond was created to provide overwintering habitat for coho salmon. These improvements along 26 miles of river and up to 40 road sites will improve habitat and water quality for fish, provide off-channel watering facilities for cattle, and reduce landowners' road maintenance costs.



UMATILLA BASIN

This basin includes the Umatilla, Walla Walla, and Willow Creek drainages. Ranching, forestry, wheat, and other forms of agriculture dominate the economy. The Confederated Tribes of the Umatilla have reservation, ceded, and usual and accustom lands in this basin. The basin is the site of successful reintroduction of spring Chinook, which were extirpated for more than 75 years. The Umatilla and Walla Walla rivers spring from forested hillsides of the Blue Mountains. Headwater areas of these rivers support remarkably high numbers and diversity of native species of salmonids. Downstream reaches of these rivers flow through highly productive wheat farms, fruit orchards, and other irrigated agriculture.



Basin Facts

Population (2000)	81,843
Cities over 10,000	2
Area (square miles).....	3,004,958
Watershed Councils.....	4
SWCD's	3

State or Federal Listed

Plants Species	5
Animals Species	1

ROUNDING UP A HEALTHIER WATERSHED

Butter Creek Range and Riparian Enhancement

Landowner by landowner, the Umatilla Soil and Water Conservation District has been expanding the Butter Creek Range and Riparian Enhancement project to its current size of more than 100,000 acres. OWEB's 2000 grant of \$96,231 to the district added the 6,000-acre Doherty Ranch to the project. Butter Creek contributes sediment to the



Umatilla River, home to populations of threatened steelhead and bull trout. The focus on the Doherty Ranch was reducing stream bank degradation and erosion. The district, together with Pheasants Forever and several state and federal partners, installed 20 spring developments to provide an alternative source of stock water, fenced livestock and elk away from riparian areas, and put up cross-fencing so that cattle could be moved more often to preserve native vegetation and prevent erosion. The district also helped the landowners develop grazing management plans that complement the new infrastructure. Projects like this help preserve eastern Oregon's ranching traditions while restoring the unique landscape and wildlife of the region.

BREAKING A HUNDRED-YEAR STREAK

Walla Walla River Water Conservation

In 2001, for the first time in a century, water flowed year-round through the Walla Walla River. Before then, the river was dewatered at Milton-Freewater during the July to September summer irrigation season. In 1998 and 1999, listing of bull trout and steelhead as threatened under the Endangered Species Act could have set up a scenario of competing lawsuits between farming and environmental interests. In the Walla Walla Basin, however, something different happened. Irrigators came forward to craft agreements and implement projects to keep more water in the river, where its headwaters support one of the strongest populations of endangered bull trout in the entire state. In 2000, OWEB provided \$290,500 to the Walla Walla Basin Watershed Council to implement irrigation efficiencies and dedicate water saved by the project to preserve adequate instream flows for fish habitat. The council partnered with several irrigation districts that withdraw water from the lower Walla Walla River, the



Confederated Tribes of the Umatilla Indian Reservation, the Oregon Water Trust, and state and federal agencies. The goal was to pipe earthen ditches to prevent water loss through seepage and evaporation, convert flood irrigation to sprinkler irrigation, and install water-measuring devices. As a result, enough water for fish will be kept in the river in perpetuity. Together with other projects removing fish passage barriers and improving riparian and instream habitat, the people in the Walla Walla subbasin are making progress toward a winning combination - revitalizing their watershed while protecting their livelihoods and way of life.



Tracy Larson, landowner and project participant, who by irrigating more efficiently, is leaving water instream for fish.

BRINGING THE WATERSHED TO TOWN

Walla Walla River Ecology Mural

A picture is worth a thousand words. But how many school children would listen to a thousand words about proper watershed function? With its Walla Walla River Ecology Mural, the City of Milton-Freewater unveiled in 2002 a beautiful and imaginative tool for educating citizens and visitors of all ages about the complex web of life in the Walla Walla River. Painted by local artist Carol Popenga, the mural stretches 6 by 60 feet on a wall in Marie Dorian Park, at the site of a former dam on the Walla Walla River. This stretch of the river has been restored to its natural function since removal of the dam, and is home to steelhead, bull trout, redband trout, chinook salmon, and eels. The mural depicts the riparian zone and associated land and aquatic life of the river and the interrelationships of a healthy watershed. It encourages public awareness of the Walla Walla River's importance to the region's people, fish, and wildlife, and the need for continued improvement and protection efforts. Mindful that the park is located on lands ceded by the Confederated Tribes of the Umatilla Indian Reservation, the artist included a pestle artifact resting in the river shallows to represent the long-term human inhabitation of the area. The Walla Walla Basin Watershed Council used OWEB's \$5,500 grant to bring the splendor of the watershed to the heart of the community.

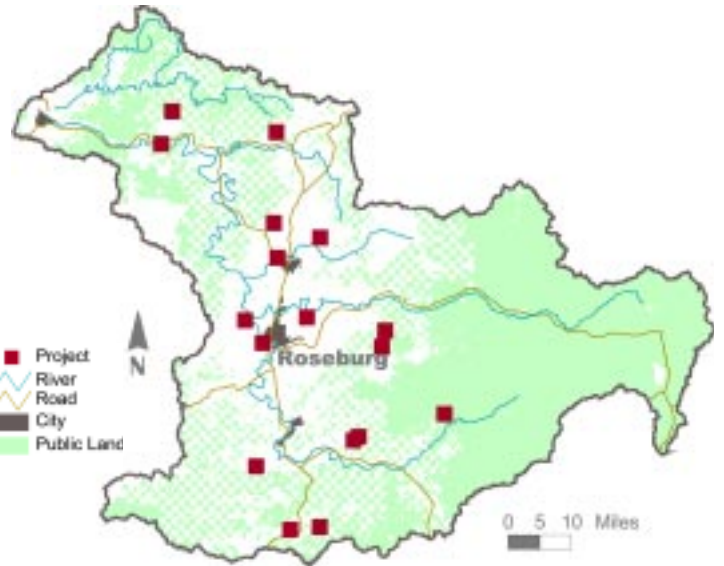


River ecology mural in Walla Walla's Marie Dorian Park.



UMPQUA BASIN

The Umpqua River is one of only two Oregon rivers having headwaters in the Cascade Mountains and cutting through the Coast Range to the Pacific Ocean. The river enters the Pacific Ocean in the center of Oregon's dune country near Reedsport. Douglas fir forests of the basin are legendary for their productivity, and provide a foundation for the timber industry, and local economies. Spring chinook and summer steelhead runs to the North Umpqua River are relatively healthy and support world-famous fisheries. Lowland, meandering interior valleys support considerable ranching activity. Whitetail deer have recovered from low numbers and are proposed for removal from federal protection.



Basin Facts

Population (2000)	99,525
Cities over 10,000	1
Area (square miles).....	3,000,643
Watershed Councils	3
SWCD's	2

State or Federal Listed

Plants Species	7
Animals Species	5

MAKING AN EARLY OREGON PLAN COMMITMENT

Lane and Judd Creek Stream Enhancement

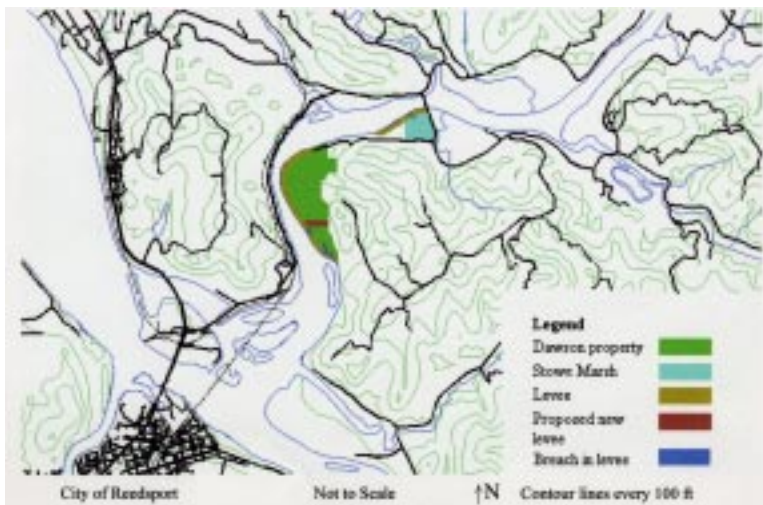
In early 1998, both the Umpqua Basin Watershed Council and the Oregon Plan for Salmon and Watersheds were new. OWEB had not been created, but its predecessor, the Governor's Watershed Enhancement Board (GWEB), awarded competitive grants for watershed enhancement. In this context, the two major landowners on Lane and Judd creeks wanted to demonstrate industrial timber's commitment to the new statewide effort to restore salmon and watersheds. Working through the council, C&D Lumber and Silver Butte Timber, along with a tenant who leased grazing land from C&D, agreed to improve water quality in the creeks by increasing riparian vegetation and reducing erosion in the lowland grazing areas and the forested uplands. GWEB's grant of \$51,980, together with in-kind support from the landowners and state and federal agencies, made possible the fencing of sensitive riparian areas on either side of each creek to exclude livestock and the planting of native vegetation in the newly protected areas. Project partners constructed several hardened, designated stream crossings and constructed off-stream water troughs for livestock to limit stream bank erosion and destruction of the riparian vegetation. The council, working with the Oregon Department of Fish and Wildlife, placed 85 large logs and 35 root wads, donated by the timber landowners, instream to improve fish habitat, slow water velocity during high flows, and trap gravel to create spawning areas. The benefits of the work became evident a year after project completion. A snorkel survey of coho salmon in the creeks on the first anniversary of the project found that coho presence had increased threefold.

BRINGING BACK THE ESTUARY

Dawson Marsh Restoration

Carl and Lucille Dawson decided not to fight Mother Nature. The levees protecting the southern portion of their 100-acre parcel from the waters of the Smith River began to fail after the major winter storms and flooding of 1996-1997. Twenty-five acres of their property, in family ownership since 1905 and located a mile from both the river's confluence with the Umpqua River and the City of Reedsport, were being tidally inundated on a daily basis. Facing prohibitive costs to repair the levee, the Dawsons decided to donate the property to the Oregon Department of Fish and Wildlife (ODFW) for restoration to estuarine wetlands, in exchange for construction of a new levee to protect the family's remaining 75 acres for pasture and a homestead. The agency needed funding to build the new levee and to breach the old levees to restore the wetland hydrology on the donated 25 acres. A \$177,600 grant from

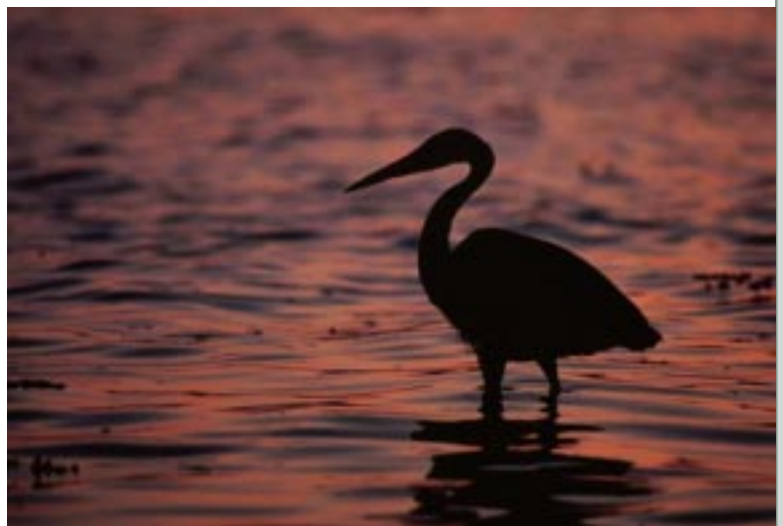
OWEB to the Umpqua Soil and Water Conservation District in 1999 paid for most of the work, with remaining funds and in-kind contributions coming from federal, state, and private entities and local volunteers. The project provided needed habitat for salmon smolts making their transition from river to ocean, added floodplain habitat with its ability to absorb and hold sediment and floodwaters, generated construction jobs in a hard-hit economy, and made it possible for the next generation of Dawson's to live and work on their property. Bringing back the estuary made good sense for fish, wildlife, and people.



IMPROVING WATERSHED HEALTH

Clover Creek Riparian Restoration

During the 1960s and 1970s, the uplands around Clover Creek, a tributary of the lower North Umpqua River east of Roseburg, were converted from forest to grazing land. Over time, land use practices resulted in a decrease in and simplification of riparian vegetation. Absent sufficient vegetation to hold the soil and take up water, and trees to shade and provide riparian habitat, Clover Creek's water quality and fish populations suffered. An old water tank culvert that blocked fish passage didn't help. But the 5,400-acre watershed did have some advantages. One was that relatively few individuals owned all the land in the watershed. The other was the landowners' growing interest in finding ways to use their land productively, while improving their watershed's health. With the help of the Umpqua Basin Watershed Council, federal and state agencies, conservation organizations, and private funders, the landowners have undertaken a series of projects to stop erosion and lay the groundwork for improving fish habitat. A 2001 OWEB grant of \$67,930 helped underwrite the most recent activities, including placing large wood and boulders back in the stream to slow water velocity, accumulate spawning gravel, create additional scour holes for fish, and increase cover. Project partners replaced the old water tank culvert with one that allows fish passage, constructed riparian fencing on both sides of the creek to exclude livestock, and planted native vegetation in the fenced-off riparian areas. Through a common vision, the landowners of the Clover Creek watershed have demonstrated that working landscapes and healthy watersheds can exist side by side.





WILLAMETTE BASIN

The Willamette Basin supports extensive high technology, agriculture, forestry, and wood products industries, along with roughly three quarters of Oregon's human population. Streams that flow from the Coast Range to the Willamette River tend to be relatively small. Streams that drain from the Cascades are relatively large and support native cutthroat, rainbow and bull trout, chinook salmon, and winter steelhead. Large dams on most Cascade tributaries significantly alter stream flow regimes. The Willamette Valley was historically characterized by wet prairies and oak savannas, but these have largely been replaced by urbanization and intensive agriculture.



Basin Facts

Population (2000)	2,327,548
Cities over 10,000	27
Area (square miles)	7,337,000
Watershed Councils	26
SWCD's	11

State or Federal Listed

Plants Species	17
Animals Species	11

RALLYING URBAN RESIDENTS TO RESTORE A RIVER

Arboretum Habitat Enhancement Project

The Friends of Delbert Hunter Arboretum saw a problem, and an opportunity, in the eroding banks of Rickreall Creek. The arboretum, which is planted solely with native Oregon plants and trees, sought to restore and protect the stream bank which lies on the north bank of Rickreall Creek and forms part of Dallas City Park. They also saw an opportunity for public education. What they didn't anticipate was the way the project would capture the



Rickreall Creek residents planting native trees and shrubs along the streambank.

enthusiasm and energy of area residents, in particular homeowners living on the creek's south bank. Some residents, even those who had lost property to erosion and invested in makeshift revetments, initially expressed trepidation that the arboretum project might make things worse. Eventually though, those homeowners, and residents throughout the city, were won over, and the project has since become a focal point for community volunteerism. OWEB's grant in 2001 of \$142,336 will cover most of the costs of stream rehabilitation and riparian habitat enhancement along a 400-foot stretch of the creek as it flows through the arboretum. When completed, the streamside regrading, engineered log jams, and native riparian plantings will provide long-term stabilization of the stream bank and improve habitat for fish and wildlife. The project has already enriched the community with strengthened partnerships, civic commitment, and stewardship of their urban river.

MAKING SALMON WELCOME IN THE CITY

Johnson Creek Fish Passage

To the delight of urban residents in Oregon's most densely populated metropolitan region, migrating salmon in Johnson Creek are a welcome sign of nature in the city. Johnson Creek originates in the Cascade Range foothills and flows through the cities of Gresham, Happy Valley, Portland, and Milwaukie



Johnson creek after removal of the Hogans Cedar Dams.

before meeting the Willamette River. The Hogans Cedar Dams were constructed across Johnson Creek in the City of Gresham about 50 years ago. The concrete and earthen dams, each about 12-feet wide, were connected to an island in the middle of the creek and created a barrier to migrating winter steelhead, coho salmon, and sea run cutthroat trout. To improve fish passage, OWEB provided \$86,552 to Metro Parks and Greenspaces to fund removal of the dam in the south channel. As a result, the newly restored creek now provides easy access for fish to reach excellent upstream habitat. With the help of SOLV, the City of Portland, Mt. Hood Community College, and employees of local businesses, the area has also been revegetated with native shrubs and grasses, and will be monitored and maintained for years to come.



One of the Hogans Cedar Dams on Johnson Creek being removed.

FROM A DUMPING GROUND TO A CITY CENTERPIECE

Ames Creek Restoration

It started with Forest Service biologist, Todd Buchholz, looking for a convenient outdoor classroom for his Sweet Home High School science students. What he found hidden among the blackberry and ivy-choked banks of Sweet Home's Sankey Park was a creek with eroding banks that had become a dumping ground for old tires and trash, and an abandoned mill dam blocking fish passage. Ames Creek once was home to thriving populations of cutthroat trout, steelhead, and salmon. According to the students' water quality testing and inventory of the stream's riparian zone, despite appearances, the creek appeared to be an excellent candidate for restoration. The South Santiam Watershed Council took up the challenge in partnership with a host of local, state, and federal government agencies, private industry, citizen groups, landowners, and of course, students. OWEB's 1998 grant of \$13,270 helped fund the project's goals of restoring native vegetation and enhancing wetlands to improve riparian and instream habitat, rerouting the stream around the dam to open fish passage, and bioengineering the stream banks to control erosion. What started as an educational experience for a small group of students has turned into a community learning opportunity on how to value and restore the natural treasure in its midst.



A high school student monitoring Ames Creek.

LAND AND WATER ACQUISITION GRANTS

With passage of Ballot Measure 66 in 1998, Oregon voters endorsed the use of state funds to acquire land and water rights to protect or restore fish and wildlife habitat, water quality, native salmonids, and overall watershed health. The OWEB Board may approve a grant to buy a conservation easement, lease a one- or split-season water right, or purchase land and water rights when a project meets three criteria:

1. The project will provide exceptional benefits to fish and wildlife habitat, water quality, native salmonids, or watershed health.
2. The project has multiple partners, and demonstrated community support.
3. The price proposed for the acquisition is fair, and the means to manage it after purchase are sufficient.

In general, acquisitions are more costly than restoration projects, so the OWEB Board has funded acquisitions judiciously. From 2000 to 2002, OWEB provided funding for nine land acquisitions and two one-season water leases at sites around Oregon. Two projects, the Whalen Island land purchase and the East Fork Illinois River water lease, provide good examples of the acquisition program's impacts.

WHALEN ISLAND ACQUISITION

The Sand Lake Estuary, located on the North Coast in Tillamook County, is one of the two most pristine estuaries on the Oregon coast. It is a tidal area where freshwater streams and rivers flow into the ocean, providing critical habitat for a wide variety of aquatic species, including steelhead, cutthroat trout, chinook, coho, and chum salmon, bald eagles, blue herons, peregrine falcons, seals, and otters.

Whalen Island is located at the heart of the Sand Lake Estuary. The island's 180 acres contain a complete estuarine environment, including forested uplands, wetlands, tidal salt marshes, and shoreline. In 2000, at the request of the Tillamook County Commission, OWEB provided nearly \$1 million to assist the Trust for Public Land and the Oregon Parks and Recreation Department in acquiring Whalen Island as a new state park. Another significant funding partner was the Federal Highway Administration, whose contribution of \$500,000 toward preservation of Whalen Island provided necessary wetland mitigation credits to allow an important highway improvement project



Aerial photo of the new Whalen Island State Park.

to proceed in Tillamook County. OWEB's grant requires permanent protection of 80 acres of wetlands adjacent to the island, and allows low-impact public access for hiking, education, and interpretive sites on the upland portion of the island. The island was privately held for three generations prior to its acquisition, and was being offered for sale for homesite development on the uplands at the time it was acquired by Oregon State Parks. OWEB's investment will give the people of Oregon a new state park that will protect a pristine estuary, provide the public with recreation and education opportunities in a beautiful setting, and achieve an outcome supported by a unique partnership of county, state, and federal agencies.



Land and water acquisition projects funded by OWEB from 2000-2002

EAST FORK ILLINOIS WATER LEASE

In the midst of the severe drought of 2001, the OWEB Board adopted temporary rules allowing the acquisition of one-year water leases to maintain instream flows in counties designated by the Governor as drought-emergency areas. The East Fork Illinois River in the Rogue Basin is one example of the timely use of this authority to address acute problems of insufficient instream water. The Illinois river supports coho and chinook salmon and steelhead. Coho salmon are listed as threatened under the federal Endangered Species Act. The area is a coho salmon "core area" for the Southwest Oregon Salmon Restoration Initiative and a key watershed under the federal government's Northwest Forest Plan. Low stream flows during the summer months raise water temperatures, increase competition for food and territory, increase the risk of predation, and limit summer rearing habitat for fish.

Oregon Water Trust is a conservation group that specializes in brokering water right purchases and leases with willing landowners to ensure sufficient instream flows for water quality and aquatic habitat. The trust negotiated an agreement with a senior water right holder in the basin to retain instream water that otherwise would have been withdrawn for the 2001 summer irrigation season. The landowner's diversions were located at the confluence of the East Fork Illinois River with Sucker and Althouse creeks, which provide important spawning and rearing habitat for key fish species. OWEB's grant of \$15,950 paid the landowner a fair-market value of \$55 an acre for 290 acres of primary water rights during the 2001 irrigation season. The grant also underwrote the elimination of a push-up dam that annually dried up the downstream reach of the river. A willing landowner, an expert partner, and a flexible and timely infusion of funding by OWEB were able to avert a potential crisis for salmon.

SMALL GRANT PROGRAM

In 2002, the OWEB Board created a Small Grant Program on a pilot basis to provide a nimble and flexible mechanism to support locally developed priorities. The Small Grant Program empowers local groups to approve on-the-ground watershed restoration projects and implement them more quickly than under OWEB's regular grant



program. The program was developed to make funds available to landowners who are working to improve water quality based upon locally developed agricultural water quality plans. Additional goals were to promote cooperation among local entities and identify overall resource protection and restoration concerns at the basin or large watershed level. OWEB hopes the program will also be an effective outreach tool that encourages landowners to be engaged in watershed restoration efforts in their community.

For the 2001-03 biennium, the OWEB Board set aside \$2.8 million to be divided equally among 28 small grant teams statewide. Teams can award grants of up to \$10,000 per project for efforts consistent with restoration priorities they have identified for their area. Membership on a small grant team is voluntary and limited to one representative from each of the soil and water conservation districts, watershed councils, and tribes located within a small grant program area. With oversight from OWEB, principally to ensure proper use of public funds, each team establishes its own operating procedures, list of eligible small grant project types, and criteria for evaluating small grant applications. On a regular basis, teams receive, review, and approve small grant applications for projects conferring benefits to natural resources and local economies on rural and urban lands.

The successes of a number of small grant teams are promising, but the OWEB Board knows the program is a work in progress as it encourages local cooperative decision making around the state. OWEB is encouraged that the availability of funds for this innovative program are already providing incentives for groups to find common ground on local restoration opportunities. As a pilot effort, OWEB will continually evaluate and improve the Small Grant Program to better meet its mandates and the needs of its diverse constituents. Two small grant teams are highlighted below.

OWYHEE SMALL GRANT TEAM

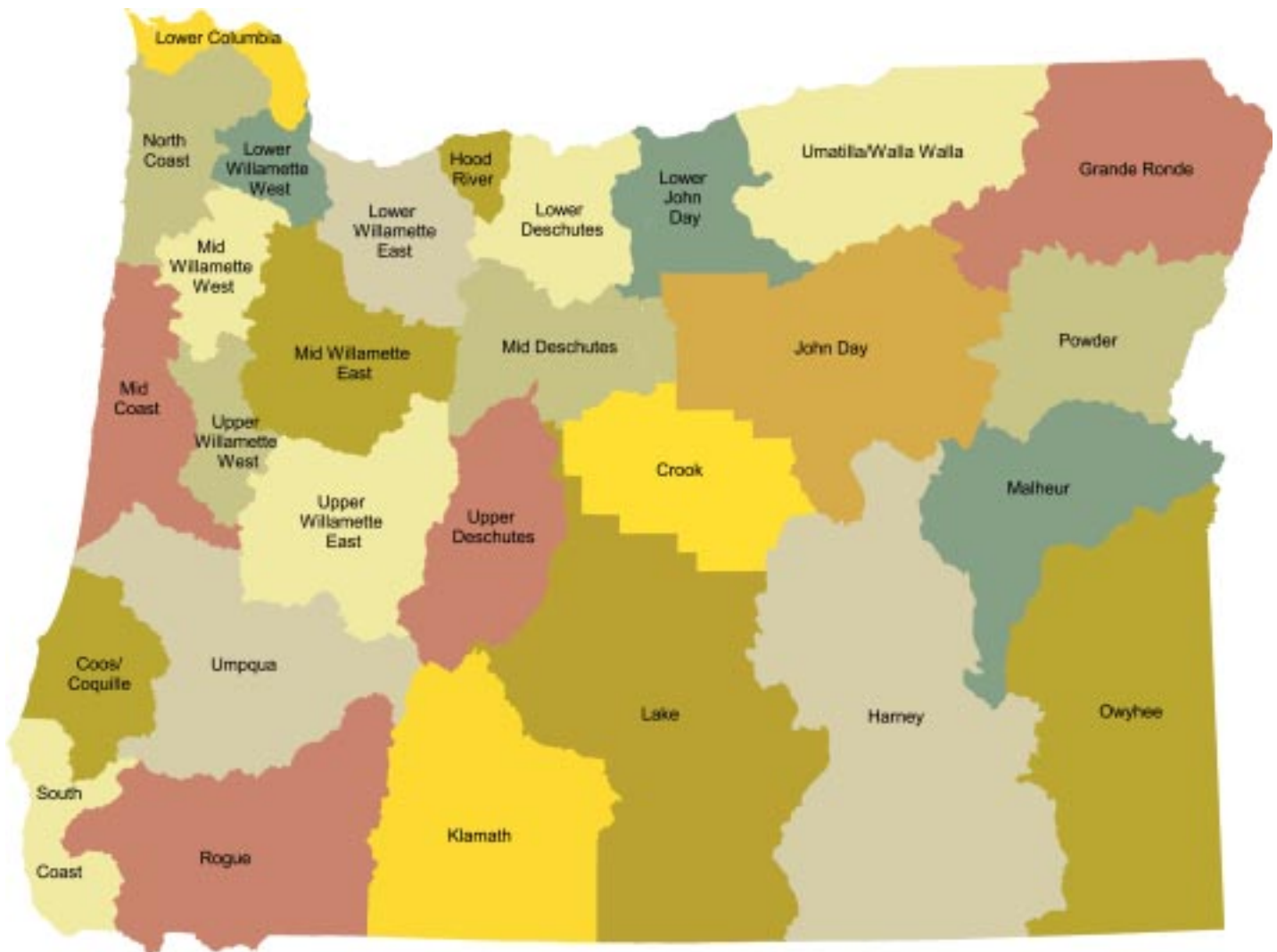
Located on an arid plateau cut by deep canyons, the Owyhee Small Grant Area in southeastern Oregon is faced with a range of challenges to improve watershed function, habitat values, and resource protection. To address these concerns the Owyhee Small Grant Team has identified water quality, water quantity, rangeland quality, soil

condition, compliance with animal feeding operations requirements, and wildlife habitat as the focus of its restoration efforts. The team has approved several local projects on private lands that address water quality through improved feedlot management, off-site watering of livestock, and irrigation management. Members of the team include the Owyhee Watershed Council and Malheur Soil and Water Conservation District.



COOS AND COQUILLE SMALL GRANT TEAM

The Coos and Coquille Small Grant Team in southwestern Oregon has identified riparian enhancement, fish passage, water quality, wetland enhancement, and instream habitat as the focus of its restoration efforts. Specifically, the team has approved several local projects on private lands that enhance water quality through sediment reduction and nutrient management, remove culverts to improve fish passage, and improve riparian habitat through noxious weed removal and native plantings. Members of the team include the Coos Watershed Association, Coquille Watershed Association, Tenmile Lakes Basin Partnership, Coquille Tribe, Confederated Tribes of Coos, and the Lower Umpqua, Siuslaw, and Coos Soil and Water Conservation Districts.



OWEB Small Grant Areas

THE AGENCY

The Oregon Watershed Enhancement Board (OWEB) supports Oregon's efforts to restore salmon runs, improve water quality and quantity, and strengthen ecosystems that are critical to healthy watersheds and sustainable communities.

The Oregon Watershed Enhancement Board was created in 1999 by the Oregon Legislature to continue and expand the mission of the Governor's Watershed Enhancement Board, which since 1987 had funded voluntary restoration and education projects on a demonstration scale.

OWEB administers a competitive grant program that awards more than \$20 million annually to support voluntary efforts by Oregonians seeking to create and maintain healthy watersheds. OWEB provides grants to develop the capacity of citizen groups to assess watershed health, then to plan, design, and undertake successful restoration projects. OWEB encourages projects that foster cooperation, secure matching funds, provide for local involvement, include youth and volunteers, and promote public understanding of the role of watersheds in the lives of people and wildlife. OWEB also channels funds to state agencies with the expertise to deliver technical assistance in project design and implementation, conduct research to better understand watershed function, and monitor outcomes to evaluate project effectiveness.

FUNDING SOURCES

OWEB's investments in watersheds are funded by a variety of sources, including:

Measure 66 – Oregon Lottery

OWEB receives seven and one-half percent of Oregon Lottery revenues as a consequence of a 1998 voter-approved initiative, Ballot Measure 66. OWEB receives approximately \$18 million annually from this source.

Salmon License Plates

Since 1997, Oregonians who pay an added \$30 for a salmon license plate for their vehicle have contributed approximately \$300,000 a year toward OWEB investments. These funds are used to support watershed restoration projects that improve transportation-related impacts to a watershed.

Pacific Coastal Salmon Recovery Funds (PCSRF)

Due to the significant impacts of the listings of many species of pacific salmon under the federal Endangered Species Act, Oregon and other western states sought and obtained this federal funding to help recover native salmonid species. Oregon now receives approximately \$15 million from the PCSRF annually.

Other Federal Grants

State agencies are often in the best position to find local projects that meet federal goals for watershed restoration and conservation. OWEB receives approximately \$2 million in these types of funds annually, particularly from the U.S. Fish and Wildlife Service.

In addition to these existing sources of funding, OWEB is undertaking a new initiative to secure funding for the watershed restoration program from private foundations.

STAFF

The agency's executive director is appointed by Oregon's governor subject to confirmation by the Oregon Senate, and is a member of the governor's natural resources cabinet. OWEB maintains field staff in eastern Oregon, central Oregon, the north coast, southwest Oregon, and the Willamette Basin to assist project sponsors, ensure that local realities inform OWEB Board policy making, and track OWEB investments. OWEB central office staff handle the agency's grants management, monitoring program, policy development, and fiscal controls.

THE BOARD

The Oregon Watershed Enhancement Board is a state agency led by a policy oversight board (Board). The Board's 17 members are drawn from the public at large, tribes, state natural resource agency boards and commissions, and federal natural resource agencies. The Board brings together a diverse range of interests to decide grant awards and set a vision for watershed restoration in Oregon.

VOTING BOARD MEMBERS

Of the Board's 17 members, 11 are voting members. At least one voting member is a tribal representative, and five others are citizen representatives. The remaining five voting members are drawn from the governing boards and commissions of five state agencies: the Board of Forestry, Board of Agriculture, Environmental Quality Commission, Fish and Wildlife Commission, and Water Resources Commission.

NON-VOTING BOARD MEMBERS

Of the six non-voting Board members, five represent federal natural resource agencies with expertise in forest and agricultural land management, water quality, and salmon recovery, and one is a representative of the Oregon State University Extension Service.

OWEB BOARD MEMBERS IN 2002

MARK REEVE (Board Co-Chair) serves as representative from the Environmental Quality Commission. He is an attorney and lives in Portland.

MARK SUWYN (Board Co-Chair) is chairman of the Board and CEO for Louisiana Pacific Corporation Portland Division. He serves as a public member of OWEB, and resides in Portland.

GEORGE BROWN is Dean emeritus of the Oregon State University College of Forestry in Corvallis, Oregon. He retired in August 1999 after 33 years of service to OSU including the past 10 years as Dean. He serves as a public member of OWEB, and resides in Corvallis.

BOBBY BRUNOE is Head of the Natural Resources Division for the Confederated Tribes of the Warm Springs Indian Reservation. He serves as the tribal representative on the OWEB Board, and lives in Bend.

RON NELSON is Secretary-Manager of the Central Oregon Irrigation District, in Redmond Oregon. He serves as a public member of OWEB.

JANE O'KEEFFE is a Lake County Commissioner and serves on the Southeastern Oregon Resource Advisory Council for BLM. She serves as a public member of OWEB, and lives in Adel.

JACK SHIPLEY serves as chair of the North Applegate Watershed Protection Association and is a board member of the Applegate Partnership. He is a private landowner in Medford, and serves as a public member of OWEB.

ZANE SMITH serves as representative from the Fish and Wildlife Commission. He is currently a forester and international natural resource policy consultant in Springfield, where he lives.

DAN THORNDIKE is General Counsel for Medford Fabrication. He serves as the representative from the Water Resources Commission, and lives in Medford.

BRAD WITT is secretary-treasurer of the Oregon AFL-CIO. He serves as the representative from the Oregon Board of Forestry, and lives in Clatskanie, Oregon.

PAT WORTMAN serves as the representative from the Board of Agriculture. He runs a cattle ranch near Enterprise, Oregon. He is also a former Willowa County Commissioner.

HUGH BARRETT* is the Rangeland Management Specialist for the Oregon/Washington State Office of the BLM, and serves as the representative of the U.S. Bureau Land Management.

PETER BLOOME* is Associate Director of the Oregon State University Extension Service in Corvallis, Oregon. He serves as representative of OSU Extension Administration.

ALAN CHRISTENSEN* is the Regional Environmental Coordinator at the Forest Service Regional Office in Portland, Oregon, and serves as representative of the U.S. Forest Service.

GAYLE NORMAN* is the Partnership Liaison with the U.S. Department of Agriculture Natural Resource Conservation Service, and represents them on the OWEB Board.

DAVE POWERS* is a Senior Policy Advisor for Natural Resources at the U.S. EPA in Portland, Oregon, and represents them on the OWEB Board.

MICHAEL TEHAN* is the Oregon State Branch Chief for the Habitat Conservation Division of the National Oceanic and Atmospheric Administration, and represents them on the OWEB Board.

* non-voting members

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Every landowner, individual, and conservation group who shared their stories of working to improve their watershed, Kari Seely, Bonnie King, Linda Burnett, Gabriela Goldfarb, Tom Shafer, Vivienne Torgeson, Rick Craiger, Karen Leiendecker, Mark Grenbemer, Doug Terra, Wendy Hudson, Ken Bierly, Geoff Huntington, Cindy Barnes, Ellie Larsen, Allison Hensey, and Matt Sykes.



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