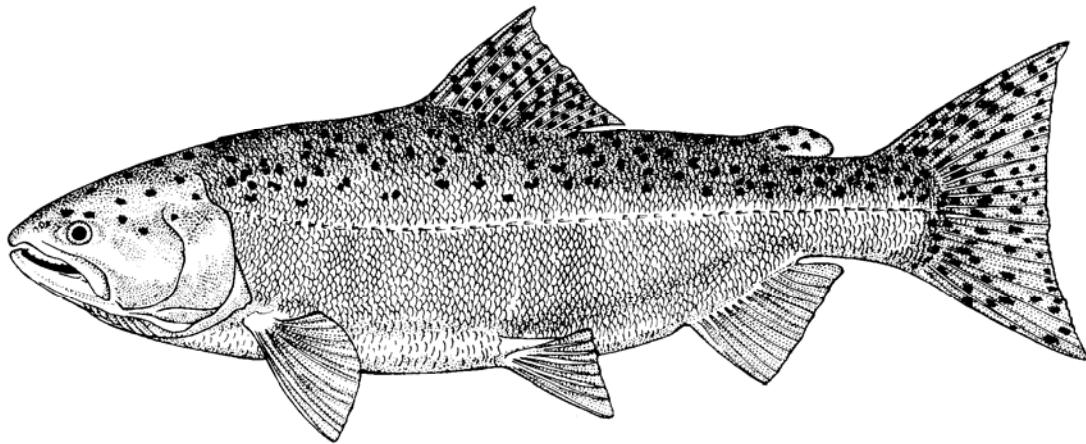




# SALMON and TROUT ENHANCEMENT PROGRAM

Annual Progress Report  
2004



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## EXECUTIVE SUMMARY

This annual report summarizes the activities and accomplishments of the Salmon and Trout Enhancement Program (STEP) in 2004.

Established by the Oregon Legislature in 1981, STEP is a program of the Oregon Department of Fish and Wildlife (ODFW) that seeks to achieve the recovery and sustainability of the state's native salmon and trout through the education of Oregon's citizens and their involvement with fish management efforts. As STEP volunteers, citizen efforts to enhance fisheries and restore habitats lend critical support to the management programs of ODFW and complement the broader statewide watershed restoration objectives of the Oregon Plan for Salmon and Watersheds (OPSW).

STEP is funded by a combination of the US Fish and Wildlife Service (USFWS) Sport Fish Restoration (SFR) Grant Program and ODFW funds (75% federal with 25% state match). The funding provides for one half-time program coordinator and one part-time program administrative assistant located in the ODFW Headquarters Office in Salem, and ten program biologists located throughout the state in eight of the ten ODFW watershed management districts. In addition to the program staff, a Governor-appointed 13-member STEP Advisory Committee (STAC) advises the Fish and Wildlife Commission and ODFW on STEP.

Within the watershed management district, the STEP Biologist can fill several roles including fish and habitat biologist, educator, outreach specialist, community or technical advisor, and lead for volunteer management. The program works with a variety of individuals, groups and organizations including adult and youth volunteers, angling and conservation interests, watershed councils, soil and water conservation districts (SWCD), private landowners, schools, individual students, and other state, federal, and local government agencies. The types of projects conducted through STEP are equally diverse and are defined only by the ways that volunteers can assist with the diversity of fish management needs found throughout Oregon. The issues and priorities within individual watersheds are often unique to that geographic area and the focus of STEP efforts can vary across the state. Generally, activities can be grouped into four main categories:

- **Education and program development** activities inform and educate the public about Oregon's salmon and trout resources, the habitats they depend on, and STEP. Projects include presentations, classes, volunteer training, tours, displays, printed materials, activities, and equipment/facility construction and maintenance.
- **Inventory and monitoring** activities characterize fish populations and their habitat. Projects include stream and riparian habitat surveys, and other methods used to research, monitor, or inventory fish life history, presence/absence, distribution, or abundance.
- **Habitat improvement** activities enhance, restore and protect habitat for native stocks of salmon, steelhead, and trout. Projects include the placement of large woody debris in streams, riparian protection and restoration, fish passage improvement, and fish carcass placement for stream nutrient enrichment.
- **Fish culture** activities produce fish to supplement natural fish production, augment fisheries, or, in the case of the classroom egg incubation program, provide educational opportunities.

A summary of what was accomplished by the program in each of these categories during 2004 includes:

- An estimated more than 20,000 people participated in STEP training, classes, tours, presentations or workshops, or visited STEP activities or displays at public events. These activities involved over 3,700 youth and adult volunteers.
- Nearly 1,000 volunteers contributed over 10,500 hours to participate in 130 projects to inventory fish populations, assess sport fisheries, conduct fish passage inspections, and survey habitat in streams and rivers across the state.
- Over 270 miles of waterways were improved for fish use by 707 volunteers through fish passage, instream, riparian, and fish carcass placement projects.
- More than 5,900,000 chinook, coho, steelhead, and trout were released by STEP volunteers for enhancement or augmentation purposes; 2,200,000 of these fish were reared before release (i.e., fed and cared for) and over 1,390,000 were marked with a fin-clip or coded-wire tag by volunteers. The classroom egg incubation program, which is primarily an education program, released approximately 100,000 unfed fry into Oregon waters. Over 10,000 adult salmonids were collected for broodstock

As the amount of work accomplished shows, volunteers contribute a very large effort to STEP and ODFW. Because STEP activities are integral to accomplishing fish management objectives, ODFW staff also contribute time and resources to the program beyond that funded by the SFR grant. Highlights of the statewide volunteer effort include:

- 5,084 youth and 6,325 adult volunteers in Oregon participated in STEP.
- If volunteer hours and mileage are converted to dollar values and added to actual monetary donations of supplies and services, volunteers contributed well over \$2,000,000 to accomplish 1,192 STEP projects.

In this report for 2004, each of the STEP Biologists has provided a narrative that describes their district and gives an overview of activities in that district for each of the four main program components of STEP. These four components are:

- Development of STEP
- Characterization of Fish Populations and Their Habitat in Streams
- Habitat Improvement
- Fish Culture

The appendices include the following program information:

- A list of the current STEP Biologists
- A list of the current STAC members
- A partial list of the groups and organizations that work with STEP

## STEP DISTRICT DESCRIPTIONS

### Northwest Region

**Lower Willamette STEP**..... *Darlene Siegel (October 2003 – June 2004)*  
*Todd Alsbury, District Fish Biologist*

The Lower Willamette STEP district includes the heavily populated Portland Metropolitan (Metro) Area and is bounded by the Columbia River on the north, the Tualatin and Clatskanie River drainages on the west, the Sandy and Clackamas basins to the east, and the Molalla/Pudding and the Yamhill River drainages in the Willamette Valley to the south.

The area supports native populations of chinook and coho salmon, summer and winter runs of steelhead, and bull, cutthroat and rainbow trout. The habitats are diverse and range from remote streams in the wilderness areas of the Cascades to the urban waters of the City of Portland. Although STEP in this area conducts a variety of fish and habitat inventory, and restoration activities, because of the large human component a main focus of the program is on education.

In 2004, there were several changes to district fish management staff positions that affected the area program. The Lower Willamette STEP Biologist position was vacant from July through December of 2004 but will be filled in early 2005. The District Fish Biologist and Assistant District Fish Biologist positions were also vacant for portions of the year. During this time, STEP activity continued with assistance from other ODFW staff but at a level less than that expected under full program staffing.

**Mid Willamette STEP**..... *Gary Galovich (October 2003 – January 2004)*  
*Bart DeBow, interim (March 2004 – September 2004)*  
*Karen Hans (December 2004 – current)*  
*Steve Mamoyac, District Fish Biologist*

The Mid Willamette STEP district is a geographically diverse area reaching across the Willamette Valley from the crest of the Coast Range east to the crest of the Cascades. The Willamette River travels the length as it flows from McKenzie River confluence downstream to the agricultural lands north of Salem. Within this area, three major stream systems flow from the western slopes of the Cascades into the Willamette (North Santiam, South Santiam and Calapooia). Another four (Rickreall, Luckiamute, Marys, and Long Tom) drain the eastern slopes of the Coast Range.

The district is also one of the most populated regions of Oregon. Salem, Eugene, Corvallis and Albany are the larger urban areas but a number of smaller cities, towns and rural communities are scattered throughout. The natural resource concerns that have accompanied the area's historical land uses of timber harvest and agriculture have been complicated by the challenges posed by urbanization.

A growing human population and the resulting changes to the landscape have placed exceptional pressures upon the Willamette's natural resources, yet the basin continues to

support a diversity of fish. Fish native to the area include spring chinook salmon, winter steelhead, and rainbow and cutthroat trout. Several species have also been introduced including fall chinook salmon, coho salmon, and summer steelhead.

In the mid Willamette, the failure to consider the importance of watershed rather than just stream health has led to the degradation and loss of aquatic habitats. A result has been federal listings under the Endangered Species Act (ESA) of the two native stocks of salmon and steelhead. Because the foundation of STEP is community involvement and volunteerism, the program has a special role in the recovery of these fish and the more comprehensive efforts to restore watersheds under the OPSW. STEP is the avenue through which area groups, schools, and individuals can be involved in all aspects of local fish management efforts.

STEP in the mid-Willamette emphasizes activities that help to educate the basin's growing human population. Of these, the district program has been particularly successful at involving both youth and adult volunteers in fish monitoring and inventory efforts. Volunteer participation with these projects not only demonstrates the ability that communities have to assist with the more technical needs of fish recovery, but also provides the "hands on" experience that allows for increased awareness and fosters stewardship. Of special interest have been new inventories on waters that are considered "at risk" and for which little or no fishery information exists. The data gathered has been essential to habitat protection and restoration efforts throughout the basin, especially those in the agricultural and urban areas

**Upper Willamette STEP** ..... *Erik Moberly*  
*Jeff Ziller, District Fish Biologist*

The Upper Willamette STEP district coordinates volunteer efforts to restore and monitor native populations of salmon and trout within the headwaters of the Willamette River. The major stream systems include the McKenzie, Coast Fork Willamette, and Middle Fork Willamette. Spring chinook salmon are the only anadromous salmonid native to the area but resident and/or fluvial populations of rainbow, cutthroat and bull trout are also found. The spring chinook and bull trout are federally listed as "Threatened" under the ESA.

Responsibility for implementing STEP in the Upper Willamette is shared between the STEP Biologist and other district fish management staff. Staff believe that assigning STEP responsibilities broadly among all members allows for greater flexibility and more effective integration of STEP throughout all fish management activities.

A variety of individuals and area organizations volunteer through STEP. These include the McKenzie Flyfishers, Cascade Family Flyfishers, Emerald Empire Chapter of the Association Northwest Steelheaders (ANWST), Trout Unlimited, McKenzie River Guides Association, Friends of Garden Lake Park, Backcountry Horsemen, three watershed councils, and two watershed partnerships. ODFW staff regularly attend meetings of these groups that also serve as opportunities to recruit new program or project volunteers. Volunteers also come from area schools, universities, and a variety of youth groups including the University of Oregon, Oregon State University (OSU), Lane Community College, and the local high schools.

**North Coast STEP**.....*Tracy Holton*  
*Keith Braun, District Fish Biologist*

The North Coast STEP district includes all of the coastal basins extending from Neskowin Creek north to the Columbia River, and the lower Columbia River tributaries from the mouth up to Plympton Creek. The district covers all of Tillamook and Clatsop Counties, and portions of Columbia, Washington, Yamhill and Polk Counties. This area holds fifteen major river systems and over 2,600 stream miles.

All district fish management staff work with STEP volunteers but the STEP Biologist has primary responsibility for administering, coordinating, and reporting program activities. Projects are identified and guided by local fish management and hatchery needs with a focus on outreach, habitat restoration, and fish propagation efforts.

Volunteer groups in the district have a high interest in fish culture programs. STEP volunteers operate two large rearing facilities and one acclimation pond, and provide key support to several ODFW hatcheries. The district also has a small hatchbox program using spring and fall chinook salmon, and a growing classroom egg incubation program involving students from seven different school districts. Staff work closely with a number of watershed councils, educators, angling groups and civic organizations throughout the district.

**Mid Coast STEP** .....*Tony Stein*  
*George Westfall*  
*Bob Buckman, District Fish Biologist*

The Mid Coast STEP district includes all of the central Oregon coast watersheds from Salmon River (Cascade Head) south to the Siuslaw. This area encompasses several large drainages including the Salmon, Siletz, Yaquina, Alsea, and Siuslaw Rivers, and a number of smaller direct ocean tributaries that also support significant salmon and trout populations such as the Yachats and Siltcoos Rivers, and Beaver, Big, Tenmile, Cummins, and Tahkenitch Creeks. District waters extend from the headwater streams on the western slopes of the Coast Range down to the coastal estuaries.

Tony Stein, the Mid Coast STEP Biologist, is located in the ODFW Newport office and has lead responsibility for the district program but George Westfall, an ODFW Assistant District Fish Biologist based in Florence, performs STEP duties in the Siuslaw Basin and other district waters south to the Umpqua Basin.

**Southwest Region**

**Umpqua STEP**.....*Laura S. Jackson*  
*Jim Muck, District Fish Biologist*

The Umpqua STEP district covers Douglas County and extends west from Diamond Lake located high in the Cascades to the coast at Reedsport. In 2004, district volunteers

participated in 83 STEP projects and contributed nearly 18,000 hours of work to aid fish resources in the Umpqua, the second largest coastal basin in Oregon.

Fish culture and education/program development projects comprised the majority of the district's volunteer efforts. Notable among these included the construction of a new hatchery raceway at a winter steelhead acclimation facility, improvements to water flows at the Gardiner hatchery facility, and the completion of the final year of unfed fry releases for the Conservation Hatchery Incentive Program (CHIP). Public outreach was also very successful with the program reaching over 8,343 youth and 7,347 adults with educational activities.

The major groups that contributed this past year to STEP in the Umpqua included the Umpqua Fishermen's Association (UFA), Gardiner-Reedsport-Winchester Bay STEP (GRWB), the Umpqua Fishery Enhancement Derby, the Student Conservation Aid program, a collection of guides who fish the South Umpqua for winter steelhead, the Umpqua Basin Watershed Council, and the Cow Creek Band of Umpqua Tribe of Indians. The program also receives a great deal of support from the other ODFW fish management and Rock Creek Hatchery staff, and many individual volunteers.

**Tenmile, Coos, and Coquille STEP** .....*Thomas J. Rumreich*  
*Mike Gray, District Fish Biologist*

The Tenmile, Coos, and Coquille STEP district is located on the southern Oregon coast and is recognized as having been the birthplace of STEP over twenty years ago. The district is bordered to the north and east by the Umpqua Basin, and by the New, Sixes, and Elk Basins to the south. This area holds three major watersheds, the Tenmile, Coos, and Coquille, and several smaller streams that flow directly to the ocean. Both the Coos and the Coquille Rivers have long inter-tidal reaches and large estuaries while the Tenmile is a coastal system dominated by several large freshwater lakes.

The district program emphasizes citizen involvement with all efforts to protect and enhance salmon, steelhead, and trout populations. Early in the development of STEP, education and outreach became a significant part of the program as it was recognized that educating the public and particularly local youth would be important toward achieving the long-term goals of STEP. Education through involvement increases awareness about the needs of native fish while at the same time furthering recovery and protection efforts. In addition to outreach activities, habitat restoration has long been an important part of the district volunteer program with the initial habitat projects having taken place even before STEP was formally established. Large numbers of volunteers also continue to be involved in the district's extensive fish culture program that includes 10 broodstock development, 4 spawning, 20 egg incubation, 7 rearing, and 21 acclimation projects. The fish culture operations have the added benefit in that they can, when compared to other individual STEP projects, more easily involve the largest number of volunteers.

**Lower Rogue STEP**.....*John Weber*  
*Todd Confer, District Fish Biologist*

The Lower Rogue STEP district covers the southern Oregon coast from Four Mile Creek south to the California border. The district includes the lower mainstem of the Rogue River



and its tributaries upstream to Mule Creek, the New, Elk, Sixes, Pistol, Chetco, and Winchuck Rivers, Euchre and Hunter Creeks, and numerous smaller coastal basins.

The focus of STEP in this area is to involve volunteers with most all ODFW fish management activities. Although the human population is not large, Lower Rogue STEP works with a number of local clubs, private landowners, timber companies, watershed councils, educators, and school groups. The majority of the volunteers are members of two organizations: the Oregon South Coast Fishermen (OSCF), and the Curry Anadromous Fishermen (CAF). The OSCF focus their efforts on fish monitoring and habitat enhancement projects. The CAF is responsible for the operation of the Indian Creek STEP Hatchery. Both groups consider community outreach to be a high priority and provide educational opportunities to other youth and adult organizations.

**Upper Rogue STEP**.....*Charles A. Fustish*  
*Dan VanDyke, District Fish Biologist*

The Upper Rogue STEP district covers all waters in the Rogue Basin upstream of the tributary of Mule Creek on the Rogue River. The district extends about 200 miles eastward from this point to the headwaters of the Rogue near Crater Lake. Approximately 400,000 people live in this area and the growing population provides a large number of schools, service organizations, sportsman's clubs, and volunteers that work with STEP on projects throughout the basin.

The Rogue River is reputed to having produced the strongest runs of native salmon and steelhead on the Oregon coast. It supports populations of coho, fall and spring chinook salmon, winter and summer steelhead, and cutthroat and rainbow trout. Also popular among anglers are the non-native brook trout found in many of the higher elevation streams and wilderness lakes, and a small population of non-native brown trout located near the upper end of Lost Creek Reservoir. Warmwater fisheries abound in many of the district ponds and reservoirs, and the backwater areas of the lower Rogue River and tributaries.

STEP activities in the Upper Rogue basin this past year focused primarily on habitat enhancement and included several new educational initiatives. During this past winter, STEP volunteers placed 1,709 coho salmon carcasses in West Fork Evan's, Taylor, Elk, Bitter Lick, and Sugarpine Creeks for stream nutrient enrichment. Volunteers also monitored spawning coho salmon in Flat Creek, a tributary of Elk Creek near Trail, where thirty large wood habitat enhancement structures were recently placed.

New programs in the district were highlighted by the Keep Oregon's Rivers Clean program and two youth angling events held in the spring and fall. Both angling events were supported by trout purchased from Oregon's private fish hatcheries including 2,000 rainbow trout from the Clear Creek Rainbow Ranch in Oregon City. The classroom egg incubation program highlighted the district's educational efforts during the winter months.

Also noteworthy were the efforts of a single volunteer that came in weekly and spent more than 200 hours on a variety of projects. Volunteers such as this are a common but important component of STEP in all districts as they provide the day-to-day support needed to keep the program running.

In terms of volunteer involvement and total volunteer contribution, the most popular program in 2004 was fish salvage. The program included several projects for which nearly 50 volunteers worked more than 300 hours and drove 1,200 miles to safely relocate over 5,000 fish to areas of refuge. The district's Keep Oregon's Rivers Clean and stream restoration programs were the second and third most popular STEP efforts with each receiving more than 100 volunteer hours.

A majority of district STEP volunteers came from area organizations including Trout Unlimited, Rogue Fly Fishers, Upper Rogue Watershed Association, Williams Creek Watershed Council, Middle Rogue Watershed Association, Seven Basins Watershed Council, Trail Creek Residents, Southern Oregon Fly Fishers, and the Southern Oregon Bass Club.

### **High Desert and Northeast Regions**

#### **Eastern Oregon STEP ..... *Jennifer Bock***

The Eastern Oregon STEP district covers the entire state east of the Cascades and includes 18 counties with nearly 67,000 square miles. The program in this area is jointly administered by the ODFW Northeast and High Desert Regions, and eight Watershed Management Districts. Major river basins include the Deschutes, Klamath, Malheur, Malheur Lake, John Day, Umatilla, Grande Ronde, and Owyhee.

The STEP Biologist works with other fish and hatchery management staff throughout the two regions to identify projects needing volunteer recruitment, supervision, or training then apportions her time to each of the watershed management districts based on the priority needs. From this, a schedule of upcoming projects is developed and distributed to potential individual and group volunteers. Much of the program work in eastern Oregon is ultimately supervised by staff other than the STEP Biologist but project documentation and volunteer time reports are sent to the program biologist on a quarterly basis. Youth and adult education continues to be a high priority for STEP in this area of the state.

Critical to the success of STEP volunteer recruitment in eastern Oregon is the contribution of the Conservation Chair of the Central Oregon Flyfishers (COF). Using e-mail, presentations, newsletter postings, phone calls and updates at club meetings, the recruiting service provided by this individual and their group generates the largest number of eastern Oregon STEP volunteers. Recruiting information is also provided to volunteers via the Sunriver Anglers newsletter. Many individuals, schools, and members of other organizations like the Ochoco Chapter Trout Unlimited, Klamath Country Flycasters, and Oregon Trout are also valued participants in STEP.

## **DEVELOPMENT OF THE SALMON and TROUT ENHANCEMENT PROGRAM (STEP)**

### **Introduction**

STEP Biologists and volunteers conduct a variety of activities that help to develop the program and educate the public about Oregon's fish resources. These include:

- Giving presentations to groups, teaching classes, conducting tours, and holding workshops.
- Hosting displays or booths at fairs and festivals, and preparing written materials such as articles, news releases, websites, brochures, and STEP publications.
- Training STEP volunteers or project cooperators with the technical skills that allow them to conduct or assist with projects.
- Maintaining or constructing equipment or facilities.
- Assisting with program administration and other activities.

Below is an overview of STEP development and education activities for each STEP district for the past year. These summaries are not intended to be comprehensive but instead reflect the range of STEP activities in that area. A summary of volunteer participation with these efforts and the number of people reached by them can be found under the "Development" category in Table 1 (Statewide Summary of STEP Participation).

### **Lower Willamette STEP**

Education and outreach continued to be an important part of STEP in the Lower Willamette district with several hundred volunteers this past year involved in activities that reached over 3,000 youth and adult participants.

Youth angling events were held at Canby Pond, Salish Pond in Troutdale, and Commonwealth Pond in Beaverton to get area youth, and particularly urban youth, active in fishing. Nearly 50 volunteers from the local chapters of the ANWST helped to coordinate the events and provided angling instruction to more than 150 participating youth.

Staff and volunteers participated in the Keep Oregon's Rivers Clean program. Six line recycling bins were placed at several popular boat ramps and bank fishing areas on the Sandy River and were quickly over-filled. During the fishing season, volunteers regularly checked the bins and tracked the use. The project has expanded to include several volunteer river clean-ups on the Clackamas River and Sandy River.

### **Mid Willamette STEP**

STEP gave over 15 presentations and tours detailing fish resources, management issues, and ODFW volunteer opportunities to a variety of interests including students, teacher or other educational organizations, angler and conservation groups, watershed councils, and other federal, state and local agencies. Because the OPSW has enhanced the role of watershed councils in restoration efforts, this arena has demanded more time of STEP. The district

worked with eight councils in a variety of roles including providing general information, providing technical assistance with inventory and habitat, assisting with volunteer training, and assisting with the development of action plans and restoration priorities.

STEP produced several informational signs and brochures detailing angling regulations, angling opportunities, and conservation issues.

The North Santiam River was one of the six areas in Oregon designated for the Keep Oregon's Rivers Clean pilot program. STEP constructed the recycling bins and placed them at four boat ramps along the North Santiam. Volunteers from the Senior Fishing Buddies and the Salem Chapter ANWST maintained and monitored the bins. During the first six months of the program, the volunteers collected thousands of yards of fishing line for recycling by Berkley Pure Fishing, one of the project sponsors.

The STEP Biologist continued to serve on the Oregon Trout Salmon Watch program Steering Committee for the Corvallis area. The STEP Biologist has worked with Oregon Trout since Salmon Watch was first introduced to the mid-Willamette area where the program serves schools from a number of communities including Dallas, Corvallis, Lebanon, Sweet Home, Salem and Silverton. STEP has selected the area's field trip sites, drafted informational materials, assisted with the program's teacher training program, coordinated ODFW participation on field trips, and has annually given presentations during two or more field trips to the North and South Santiam River.

STEP again hosted work experience or "job shadow" students from area high schools and universities, served as mentor for several additional high school student field projects, and supervised internships from OSU Fisheries and Wildlife program. STEP provides a unique opportunity for interns to become involved with a greater diversity of activities than they might otherwise encounter in other ODFW fish research or management programs.

Because of the program's community involvement and experience with natural resource issues, the STEP Biologist continued to serve as an ODFW representative on several outside boards, committees and commissions. These include the Northwest Center for Sustainable Resources Advisory Board, several watershed council technical teams and the Oregon Watershed Enhancement Board Willamette Regional Review Team.

Aside from their participation with field activities, volunteers further contributed to the day-to-day needs of ODFW by constructing and maintaining fish traps and other sampling equipment, and by developing and maintaining angling access sites.

### **Upper Willamette STEP**

Through STEP, ODFW again participated in the Oregon Trout Salmon Watch program. Staff served on the Eugene area steering committee and took part in six field trips involving more than 180 students from area schools.

Upper Willamette STEP partnered with several local angling groups to host the Fish N' Fun display at the Lane County Fair held in Eugene. Visitors to the display could learn how to cast and fish, and found information on STEP, bull trout, riparian areas, and area stream

habitat restoration projects. The booth also had several large viewing aquariums that held live fish.

STEP sponsored a student internship for Kyle Sterling, a junior from Pleasant Hill High School. Kyle participated in a variety of fish sampling activities including the tagging of bull trout, hook-and-line sampling, snorkel surveys, and the operation of trap nets. Kyle also assisted with stream restoration projects and fish stocking in Cascade lakes.

Through STEP, district staff worked with three local watershed councils and two watershed partnerships. Volunteer groups included the McKenzie River, Middle Fork Willamette River, and Coast Fork Willamette Watershed Councils, and the Mohawk River and Lost Creek Watershed Partnerships. District staff also attended regular meetings of several area angling groups including the Emerald Empire Chapter ANWST, McKenzie Flyfishers, Cascade Family Flyfishers, Trout Unlimited, and Friends of Garden Lake Park. Club meetings often serve as a source of volunteer recruitment and an opportunity for public education and outreach on fish management activities and issues.

### **North Coast STEP**

Outreach and education were again a focus of North Coast STEP this past year. A highlight of the more than 30 volunteer events in the district was the 2004 STEP Conference titled "STEP Into the Future". The Tillamook Anglers and Nestucca Anglers jointly served as the conference host and had 55 members contribute well over 1,300 volunteer hours. Twenty-five presenters and over 300 participants took part in the March event held at the Tillamook County Fairgrounds that included presentations, round table discussions, children's activities, volunteer participation in the district's wild winter steelhead broodstock collection program, a banquet, and a silent auction. Guest speakers included the ODFW Director, Bill Monroe of *The Oregonian*, and Jim Martin, Director of Conservation for Pure Fishing.

Other STEP district outreach activities included involvement in the Children's Clean Water Festival held at the Twin Rocks Friends Camp in May, an event that provided displays and activities for local fourth graders on salmon and their habitats; Oregon Trout's Salmon Watch program; Down By the Riverside; the Earth Day Celebration at the Children's Museum in Astoria; and the OSU Extension workshop titled "From the Forest to the Sea".

STEP participated in Camp UKANDU, a weeklong annual event for children fighting cancer. Volunteers from the Tillamook Bay Boating Club donated funds and set up a net pen that the children fished for stocked rainbow trout.

The North Coast district hosted five events as part of the statewide Youth Angling Enhancement Program, a new effort to increase youth angling opportunities. Local businesses donated fishing tackle, bait, ice, drinks, and prizes, and local ODFW hatcheries provided the rods and reels. Volunteers from the Nestucca Anglers, Tillamook Anglers, ANWST, and Rockaway Lions Club hosted casting contests, helped rig the fishing gear, and provide angling instruction. Many of the more than 540 children who participated came away having caught their very first fish.

Due to school budget reductions, existing aquaculture classes and fish rearing programs were suspended at both Tillamook High School and Warrenton High School for the 2003-2004

school year. Scaled-back versions of these programs were restarted for the 2004-2005 school year. Astoria High School has opened a new Aquatic and Applied Science Center which houses their aquaculture program and provides lab space for visiting scientists.

Participation in the classroom egg incubation program continues to grow with the addition of several new elementary and middle school classes. The STEP Biologist made numerous trips to area classrooms to deliver eggs and give presentations on fish biology.

In July, volunteers from the ANWST helped with the expansion of the disabled angling platform at North Fork Nehalem Hatchery. ANWST volunteers also helped repair the Siskeyville Boat Slide on the Wilson River.

### **Mid Coast STEP**

STEP and the Mid Coast Watershed Council (MCWC) continued a partnership to enhance watershed education and awareness in mid-coast communities. Using the Stream Scene curriculum, STEP and the MCWC Education Coordinator worked with 21 area teachers to develop a variety of sampling and assessment projects for area schools and youth groups. More than 750 students and 123 parents participated in 16 field trips to collect water quality, stream habitat, and aquatic macroinvertebrate data.

STEP worked with members of the Lincoln SWCD Watershed Workforce to identify priority areas for stream habitat and spawning fish surveys. The project has successfully recruited many private landowners wanting to improve fish habitat.

STEP gave presentations on water quality, fish identification, salmon life cycle, and salmon habitat requirements to 85 participants at the “Blast from the Past” workshop held at the Drift Creek Camp in Lincoln City. STEP also provided field training on juvenile fish sampling, stream habitat survey, and stream mapping techniques.

STEP participated in the Schooner Creek Fair, a community-sponsored event held in Lincoln City.

STEP provided assistance and support to the Salmon River Keepers, a Lincoln City group organized in response to the concern for illegal angling activity and unsanitary conditions on the Salmon River. The Salmon River Keepers has initiated a weekly river clean up and is working with the Oregon State Police to gather enforcement information.

Volunteers from Florence STEP provided fishing tackle and instruction for more than 350 youth participating in two Youth Angling Enhancement Program events held in March at Carter Lake and Siltcoos Lagoon.

### **Umpqua STEP**

Umpqua STEP reached over 8,000 kids and 7,000 adults through a variety of education and outreach activities. STEP volunteers assisted at five Free Fishing Day events and hosted other youth-oriented efforts at Ocean Fest (GRWB), the Sportsman Show Pepsi Pond (UFA), and Pioneer Days (UFA and a grant from the Cow Creek Band). Umpqua STEP also participated with other agencies in the spring and fall Tsalila event that was recently

recognized by the Environmental Education Association of Oregon with the award of “Excellence in Environmental Education by an Organization.”

The Cow Creek Band of Umpqua Tribe of Indians donated materials and constructed a second concrete raceway at the Seven Feathers STEP acclimation site. The project increased the facility capacity from 400 to nearly 2,000 pounds of fish. The expansion allowed ODFW to acclimate all of the 92,000 winter steelhead smolts released in 2004.

After a devastating brood loss in the fall of 2003, GRWB STEP developed a new water re-circulation system to keep the brood fish healthy. The system included a water gauge and a table that outlined the gallons-per-minute (gpm) needed per number of fish being held, a pump to recycle about 100 gpm of water, and improvements to the aeration system. Mortality at the facility during the 2004 brood year was less than 2%.

More than 28 groups of disabled anglers and seniors visited The Bowman Pond for the Handicapped during the first summer of operation in 2004. Tenmile Elementary School also visited the pond several times for outdoor education classes and helped with site maintenance and landscaping. The facility also received a grant from the Cow Creek Band of Umpqua Tribe of Indians to improve the aeration system and install a waterfall that serves as an enhanced sound-system for the visually impaired.

### **Tenmile, Coos, and Coquille STEP**

Program development in the Tenmile, Coos, and Coquille STEP district in 2004 focused on citizen involvement with fish management projects. Seventy-three STEP projects involved nearly 4,500 volunteers with school and other youth groups providing the majority of volunteers.

Presentations about the needs of salmon and trout, and tours of enhancement sites were given to a number of local service or other civic groups. These were instrumental in promoting conservation awareness and recruiting STEP volunteers.

STEP again received excellent coverage by the local written and broadcast media. *The World* newspaper of Coos Bay regularly wrote articles about, and provided pictures of current STEP activities.

For the fourteenth consecutive year, STEP volunteers continued to work on the development of the Millicoma Interpretive Center. Volunteers installed 12 hatchery troughs increasing incubation capacity at the facility to nearly 1,000,000 eggs.

The Millicoma Interpretive Center continued to be a popular site for student groups and others to come and learn more about salmon and steelhead. The facility received over 3,500 visitors in 2004, the largest number of visitors since the facility began.

A Youth Angling Enhancement Program event was held at the Millicoma Interpretive Center where 1,200 rainbow trout were stocked in the steelhead acclimation pond. This was an enormous success with hundreds of children participating and many having caught their very first fish.

A Youth Angling Enhancement Program event was held at Eel Lake where volunteers for the fifth consecutive year hosted a fishing clinic during the June Free Fishing Weekend. The event featured a course where children learned everything from knot tying to fish identification. STEP volunteers reared 1,000 rainbow trout in a net pen in Eel Lake specifically for the clinic. The children are allowed to fish in the net pen and the fishing is always very good!

Volunteers and students installed new displays at the student-run Coquille High School STEP facility that is used to spawn and rear salmon and steelhead. On each Tuesday afternoon throughout the winter, the high school students teach visiting elementary school classes about salmon. The event has come to be known as “Tour Tuesday” and provides a wonderful learning experience for the younger students and their teenage instructors. In the spring, hundreds of Coquille High students marked the juvenile fall chinook prior to release.

### **Lower Rogue STEP**

The Lower Rogue STEP Biologist drafted several news releases for local newspapers, radio, and television stations in an effort to recruit volunteers, inform the public about STEP projects, and recognize STEP volunteers for their accomplishments.

STEP gave 48 presentations to area angler and conservation groups on the topics of fish management, fish habitat, angling regulations, STEP, and volunteer recruitment.

Forty-five presentations were made to students from five area schools. Topics included salmonid life history, fish anatomy, fish culture, and habitat protection and restoration. Many of the presentations included field trips to STEP project sites.

Using written and phone surveys, staff asked district STEP volunteers to identify the types of projects that they feel are most meaningful and can be used to facilitate greater volunteer involvement. The surveys also helped to create a stronger relationship between ODFW and the volunteer community.

To increase STEP participation and encourage volunteer membership with local angling groups, the OSCF and CAF jointly hosted a booth during the second annual Slam’n Salmon Derby held on Labor Day weekend at the Port of Brookings. The booth included information about local STEP activities, an aquarium that held live adult salmon, and several portable tanks that the OSCF stocked with rainbow trout to provide a fishing opportunity for young anglers. The event also raised \$4,000 for southern Oregon fish enhancement efforts.

More than 50 youth participated in the annual Free Fishing Day event held at Libby Pond. The event is hosted by ODFW, United States Forest Service (USFS), and CAF. STEP volunteers sign-up the children and teach them how to fish. The Gold Beach Rod and Gun Club also provided free hot dogs and drinks. Other participating groups included Cal-Or Enhancement and several local businesses that donated money to purchase fishing rods and other equipment given away during the raffle.

### **Upper Rogue STEP**

Outreach and education were an important part of STEP in the Upper Rogue district in 2004. Activities included:



- A class to train volunteers to conduct surveys of spawning fish.
- Three fish life history and fish physiology presentations.
- A stream survey workshop for a middle school class.
- Two fish identification workshops for fish salvage program volunteers.
- A tour of the Flat Creek restoration project for the Politics and Conservation class at Southern Oregon University taught by former Congressman Les AuCoin.
- Presentations on STEP and other ODFW education programs to the Bear Creek Watershed Education Partner's Workshop
- A presentation about the Flat Creek restoration project to high school students attending a conservation-oriented summer camp.
- A display on area STEP and fish management projects developed for the Medford Sportsman's Show held in February.
- A display on the Keep Oregon's Rivers Clean developed for National Public Lands Day events.
- Participation in the Youth Angling Enhancement Program event held at Denman Pond.
- A picnic held in August to recognize district STEP volunteers.
- A Free Fishing Day event held at the Expo Ponds in Central Point.

### **Eastern Oregon STEP**

STEP volunteers organized and hosted the annual Kokanee Karnival. Eight central Oregon elementary schools participated in the program in 2004. Partners included the COF, Sunriver Anglers, Central Oregon Llama Association, ODFW, and the USFS Deschutes National Forest. The Kokanee Karnival provided:

- A one-week fall field trip program for students to learn about stream habitat and observe naturally spawning kokanee salmon.
- Fish anatomy and dissection classes using trout provided by Fall River Hatchery.
- Participation in the classroom egg incubation program. Trout eggs are delivered to the participating classrooms in October, November or February.
- An angler education clinic that provides three hours of instruction on fish biology, angler ethics, fishing tackle, and angling technique. After the classroom sessions, students enjoy a barbecue lunch and the opportunity to fish in nearby Shevlin Pond.
- A community stewardship project (tree planting, storm drain marking, letter writing campaigns, pond cleanup, etc.).

Kokanee Karnival continues to receive exceptional support from both the volunteer community and the financial sponsors. The program is run entirely by volunteers with ODFW serving only a consulting role. The Kokanee Karnival internet web site can be found at [www.kokaneekarnival.org](http://www.kokaneekarnival.org).

Many of the youth angling events held this past year in eastern Oregon would not have been possible without the help of STEP volunteers who contributed over 700 hours at events held in Prineville, The Dalles, Bend, Camp Sherman, and Sunriver. Several of these events included instruction given by volunteers on "care of catch", fish identification, and water safety.

## **CHARACTERIZATION OF FISH POPULATIONS AND THEIR HABITAT IN STREAMS**

### **Introduction**

Volunteers assist the Department in conducting a variety of inventory, monitoring, and evaluation projects to provide information on Oregon's native salmon, steelhead, and trout, their habitats, and the fisheries for them. The major types of surveys conducted through STEP are:

- Angler or creel survey.
- Fish passage or culvert inspection.
- Fish population or distribution survey or monitoring.
- Stream and other aquatic habitat survey.
- Miscellaneous monitoring activities (including water quality monitoring).

To conduct these surveys, volunteers become skilled in sampling methods and learn to operate and maintain a variety of gear including:

- Adult fish trap
- Juvenile fish trap
- Hoop trap
- Rotary fish trap
- Backpack, raft, or boat electrofisher
- Seine
- Gill net
- Trap net
- Snorkel gear
- Hook-and-line
- Angler interview or creel
- Telemetry equipment

The following is an overview of STEP fish population and stream habitat characterization activities conducted by each STEP district during this past year. These summaries are not intended to be comprehensive but instead reflect the range of STEP activities in that area. A summary of stream/river distances surveyed and volunteer participation can be found under the "Characterization" category in Table 1 (Statewide Summary of STEP Participation).

### **Lower Willamette STEP**

Volunteers in 2004 assisted with fish and habitat surveys throughout the Lower Willamette STEP district. The following are just a few examples of volunteer effort from this past year:

- Members of Westfly, a Portland area on-line fly fishing group, conducted surveys of the high Cascade lakes in the Mount Hood National Forest stocked by ODFW. The volunteers collected a variety of fishery and habitat information including angler catch-per-unit-effort, fish distribution, and the physical characteristics of each lake.

- STEP volunteers collected angler creel information for the steelhead fisheries on the Sandy and Clackamas Rivers. The annual survey is a collaborative effort with the Oregon State Police.
- Interns from the OSU Fisheries and Wildlife Program, and Portland State University conducted stream habitat surveys of Clear and Deep Creeks in the Clackamas Basin. These surveys identified areas in need of restoration and provided baseline data for monitoring the effectiveness of restoration projects. The surveys were conducted through cooperation with, and funding assistance from the Clackamas River Basin Council. The Council is using the information in the watershed assessment and to develop a comprehensive restoration action plan.

### **Mid Willamette STEP**

STEP conducted physical or biological surveys in most all of the major sub-basins in the mid-Willamette area. Much of this effort was toward annual spawning surveys for native winter steelhead in the Cascade and Coast Range streams, and surveys for spring chinook salmon in the larger Cascade river basins. The steelhead surveys are among the most difficult for volunteers as they take place during the late winter and early spring when stream flows are often high or unpredictable.

The more popular of volunteer activities remains assistance with the annual summer snorkel surveys in the North Santiam, South Santiam, and Calapooia River basins. These surveys provide annual counts of returning adult salmon as well as estimates of the number of juvenile chinook salmon and steelhead present in the rivers before their out-migration to the ocean. Of particular interest has been salmon production in those areas above the larger dams where, after having been excluded for many years, chinook salmon have only recently been re-introduced. This includes the Breitenbush River and upper mainstem North Santiam above Detroit Reservoir, and the upper South Santiam River above Foster Reservoir.

STEP again led the district's small stream sampling effort through the construction and operation of hoop traps. Landowners, high school students, watershed council volunteers, and members of the Albany Chapter ANWST maintained traps at sites located throughout the district. As new monitoring sites were identified or requested, volunteers constructed additional traps allowing for the expanded inventory effort. The primary intent of this program has been to document the presence of cutthroat trout, juvenile salmon, and/or juvenile steelhead in waters where little or no fish information exists and to get a sense of relative abundance. The effort has also yielded valuable life history information such as the timing or distance of migrations and has identified areas used by spring chinook salmon or winter steelhead for only juvenile rearing. The targeted waters may be seasonal and are typically in urban or low elevation agricultural areas. Often the streams have been severely altered and receive little habitat protection because of perceived fishery value. The information has in turn been used by cities, counties, watershed councils and others to develop habitat restoration and protection plans, and to identify individual project opportunities.

In the high lakes of the Cascades, volunteers assisted in the fall with annual seine and gill net surveys. The surveys are used to gauge the health of each lake's fish population and to monitor the success of stocking programs.

On the lower Calapooia River, Thompsons Mill has created both stream flow and passage concerns for anadromous and other native fish. To provide the information needed to determine a "best solution" for water management at the site, volunteers conducted physical and biological surveys on the complex of channels, and monitored fish behavior and movement at the water diversion structures.

### **Upper Willamette STEP**

Volunteers in the Upper Willamette district operated several upstream migrant hoop traps to monitor spawning cutthroat trout. The projects collected valuable information on the life history and relative abundance of local cutthroat and other fish populations, and have been an important outreach/education tool as they provide volunteers a "hands on" experience working with fish in the local streams.

Volunteers assisted staff with fall spawning ground surveys for spring chinook salmon on 15 miles of the Mohawk River. The surveys were a cooperative effort between STEP and the Mohawk River Watershed Partnership. Despite the extensive effort, no chinook were found in the surveyed reaches. Low summer flows in the mainstem and limited suitable spawning habitat likely hinder spring chinook use of the basin

STEP volunteers and several students from OSU assisted staff with spring chinook salmon spawning ground surveys in the upper Middle Fork Willamette Basin. The dams on the Middle Fork block access to over 80% of the historical spawning habitat in the basin. The surveys were used to determine the survival and spawning success of salmon captured then relocated above the impassable dams. Surveys were conducted on the North Fork of the Middle Fork Willamette, and in the mainstem Middle Fork Willamette above Hills Creek Reservoir.

A STEP volunteer worked with the City of Eugene to sample fish in the City's urban waterways. This is part of a larger effort by the City to recover spring chinook salmon and other fish within the urban growth area. The study helped to determine species composition and distribution, and to identify possible barriers to fish migration. Seven different waters were sampled using seines and a backpack electrofisher. Stream and riparian habitat data were also collected.

The City of Eugene worked with the Army Corps of Engineers, ODFW, and other natural resource agencies to restore habitat at Delta Ponds, a 154-acre area that borders the Willamette River. The project will re-establish connectivity of a portion of the historic floodplain to the Willamette River and improve habitat for native fish species. STEP worked with the University of Oregon's Service Learning Program and the City of Eugene's Stream Team to develop and implement a long-term fish and habitat monitoring strategy. Initial monitoring efforts focused on collecting pre and then post rehabilitation data on the use of the area by winter rearing juvenile salmon, steelhead, and cutthroat trout.

STEP volunteers worked with staff to conduct a fish presence survey on Wallace Creek, a tributary to the Middle Fork Willamette River. No fish were observed but two culverts were identified as barriers to fish migration.

### **North Coast STEP**

Volunteers from Astoria High School and the Neacoxie Watershed Council conducted fish presence/absence surveys of the lower stretch of the Neacoxie River in Gearhart. The effort sampled juvenile coho salmon, stickleback, sculpin, starry flounder, and pipefish.

Volunteers from the Rainland Flycasters, ANWST, and Oregon Trout conducted steelhead surveys in the Necanicum and Salmonberry Rivers.

Volunteers from the ANWST assisted staff with the installation of an adult fish trap to monitor winter steelhead returns at Bays Creek on the Nestucca River. The data is used to compare the production and survival of wild Nestucca winter steelhead and the introduced Alsea stock hatchery fish.

### **Mid Coast STEP**

STEP volunteers conducted spawning salmon, stream habitat, and fish population surveys throughout the Mid Coast district.

Lincoln City volunteers and the Hebo District USFS operated a trap on the South Fork of Schooner Creek in the Siletz Basin as part of a long-term effort to monitor steelhead and coho salmon populations at a basin scale.

Volunteers in the Yachats area continued to monitor water quality in the Yachats River and estuary. The STEP Biologist guided the selection of sampling sites and provided the volunteers with training and technical assistance on the use of the temperature monitors and monitoring protocols. The volunteers also surveyed streams in the Yachats Basin to determine adult escapement and the spawning distribution of fall chinook and coho salmon, and winter steelhead.

Up to eight volunteers from Florence STEP assisted with the daily operation of a juvenile fish trap on Knowles Creek in the Siuslaw Basin. The initial effort was conducted for up to four months each spring but was expanded this past year to include a fall sampling. A core group of the volunteers has been trained so that they can assist others with fish identification and fish handling techniques.

Several groups of students conducted monthly stream habitat surveys to map and review changes in Hadsall Creek, a tributary of the Siuslaw River. The information is used to develop recommendations for future restoration efforts.

Volunteers working on Condon Creek hosted 7<sup>th</sup> grade classes from Florence area schools at a day-long watershed workshop held in the fall and again in the spring.

### **Umpqua STEP**

Umpqua STEP volunteers continued their support of the district's research and monitoring projects. The UFA was a valuable part of the CHIP study to compare the survival of

hatchery and wild-stock coho salmon. The study will also compare survival of coho unfed fry and smolt releases. UFA members helped spawn the coho and collect genetic samples at Rock Creek Hatchery. Once the eggs were transferred to the volunteers, they tracked the survival of each lineage of fish. The release protocol had all of the more than 445,000 unfed fry released for the study evenly distributed within the best coho habitat available in the Calapooya watershed thereby preventing any pair or family of fish from having a survival advantage due to habitat. 2004 was the third and final year of CHIP fry releases. In the fall of 2004, adults from the first year of releases returned to the Calapooya and a genetic sample was taken of each adult fish to determine its heritage and to evaluate hatchery and wild-stock backgrounds. Coho released as smolts are distinguished by a fin and maxillary clip, and the unfed fry releases return as unmarked fish.

Volunteers helped extract otoliths from 125 coho for the Brush Creek study to evaluate the survival of unfed fry. Approximately 200,000 otolith-marked coho were annually released in Brush Creek from 1999 to 2001. The fry-to-smolt survival of these fish ranged from 0.7 to 1.3% and they comprised about half of the outmigrating smolts in Brush Creek during the study years. Otolith-marked coho have comprised from 35% to 57% of the spawning adult coho in Brush Creek. Additional analysis of the data and comparisons to the control stream will be done in 2005.

Volunteers helped to monitor fish numbers, hatchery returns, and stray rates at Happy Valley, Canyon Creek, South Umpqua Falls, and Galesville. The volunteers also assisted with spawning ground surveys used to evaluate the success of the STEP fall chinook recovery projects on the Calapooya River.

### **Tennile, Coos, and Coquille STEP**

Throughout the district, habitat for salmon, steelhead, and trout has been compromised because of road crossing culverts that block fish passage for adult and juvenile fish. Volunteers have expended a considerable amount of effort to correct the known passage problems but more survey work is needed to identify additional barriers and develop the needed corrections. Stream habitat and culvert surveys remain a high priority for the STEP district inventory efforts.

The most important annual monitoring conducted by district volunteers surveys juvenile fall chinook in the Coos and Coquille estuaries. In the Coos Basin, volunteers annually release more than 3,000,000 juvenile chinook from STEP facilities and the large hatchery program requires a continual evaluation of the potential impact to wild chinook. One assessment method monitors the growth and abundance of juvenile chinook in the estuary. Past surveys have shown that a mean fork length of juvenile chinook when they outmigrate to the ocean in the fall of less than 13 cm indicates that carrying capacity for the basin may be exceeded. The estuary sampling begins in the spring and continues through the fall of the year.

### **Lower Rogue STEP**

Volunteers from the OSCF completed their 14<sup>th</sup> annual survey of juvenile chinook in the Chetco River. The survey uses a beach seine set at selected stations twice each month from May through September and measures the abundance and the development of naturally produced fall chinook smolts. The data is also used to determine when the release of

hatchery chinook smolts will have the least impact on the naturally produced fish in the estuary.

The OSCF operated a downstream migrant trap for juvenile fall chinook on the Winchuck River upstream of tidewater. The volunteers worked in two-person teams to daily identify, count, and mark any captured fish, and monitor any recaptures. The STEP Biologist provided a weekly training session on safe trap operation, fish identification, and fish marking techniques. Weekly expansion estimates for the number of fall chinook salmon smolts were summarized throughout the June through August migration period to provide a total population estimate. In 2004, the trap was operated 91 days and sampled over 7,500 fall chinook smolts. This number was expanded for an estimated total of 69,000 fall chinook smolt outmigrants from the Winchuck River. Operation of the trap represented the continuation of a 14-year database that continues to be one of the district's priority monitoring efforts. The OSCF have assisted with the trap operation in each of the past six years. Given the project's success, an additional trap site is being considered for next season that will also rely heavily on the assistance of STEP volunteers.

STEP volunteers again assisted with the annual Huntley Park seining operation with over 450 hours of effort. 2004 was the 28<sup>th</sup> consecutive year for this project that monitors adult fish populations in the lower Rogue River. The data is used to monitor stock abundance, species and age composition, and the hatchery-to-wild ratio of summer steelhead, and fall chinook and coho salmon. In the fall, the operation also serves to collect broodstock for the Indian Creek STEP Hatchery. In terms of the number of fish sampled, 2004 was an "above average" year with over 1,350 adult fall seined. Sampling takes place from July 15 through October 31 and, along with the Winchuck trap, is one of the district's most important monitoring efforts.

### **Upper Rogue STEP**

Volunteers from the Rogue Fly Fishers conducted surveys of Flat Creek, a tributary of Elk Creek located near Trail, to determine the number of coho salmon using spawning gravel deposited at stream habitat structures placed during restoration efforts.

### **Eastern Oregon STEP**

A fish trap located on Ochoco Creek was used to monitor adult redband trout during the annual spawning migration. A portion of the trout sampled was used as broodstock at Oak Springs Hatchery. Student volunteers from Prineville High School's Natural Resource Class were trained to identify and handle fish, operate the trap, and collect the required data. The students donated over 100 hours to this project and were assisted by volunteers from the COF who contributed more than 50 additional hours.

As part of an effort to evaluate redband trout population trends and recover the redband fishery, STEP volunteers from the COF assisted staff with electrofishing surveys in the South Fork Crooked River. The South Fork Crooked River provides important trout habitat in a larger system that has been degraded by heavy livestock grazing.

Under the guidance of entomologist John Anderson, volunteers from the COF continued a study of macroinvertebrates in the Crooked River below Bowman Dam. Each month, volunteers used drift nets and a Hess bottom sampler to collect aquatic insects. Water

velocities were determined at each drift sample to estimate drift rates and densities. The samples can reveal patterns of macroinvertebrate drift and whether flow influences macroinvertebrate species composition. Volunteers also collected and analyzed trout and whitefish stomach samples. The data is providing a better understanding of the aquatic ecology of the Crooked River and is guiding fish management decisions. Project volunteers were recruited and coordinated by the COF with the STEP Biologist and other ODFW staff providing equipment and other project support. Volunteers have donated over 600 hours and 600 driving miles to this study.

Volunteers assisted with sampling Lahontan cutthroat trout in the Steens Mountains to gather fish distribution and genetic information. The surveys required long hikes through rugged terrain to reach the remote cutthroat streams and will help to determine the status of these unique and isolated fish populations.



## **HABITAT IMPROVEMENT**

### **Introduction**

Volunteers each year conduct or assist a large number of habitat improvement projects on private and public lands throughout Oregon. These include efforts to improve or restore:

- Fish passage.
- Instream habitat.
- Riparian, off-channel, wetland, or floodplain habitat.
- Stream nutrients through fish carcass placement.

The following is an overview of habitat improvement projects conducted by each STEP district during this past year. These summaries are not intended to be comprehensive but instead reflect the range of STEP activities in that area. A summary of stream/river distances affected, and volunteer participation can be found in under the “Habitat” category in Table 1 (Statewide Summary of STEP Participation).

### **Lower Willamette STEP**

With grants from the NOAA Fisheries/Fish America Foundation, Oregon Wildlife Heritage Foundation, and Portland General Electric, restoration continued in Clear Creek, a tributary of the Clackamas River. The project includes fish passage improvement, instream large wood placement, and riparian restoration. This was also the first year of an annual study to identify riparian restoration projects that will reduce summer water temperature.

STEP partnered with local watershed councils on riparian restoration projects in Clear and Scappoose Creeks. Projects were completed on Spring and Bargfeld Creeks in the Clear Creek basin, and on Raymond Creek and an unnamed tributary to Raymond Creek in the Scappoose Basin.

STEP partnered with the Sandy and Clackamas Fish Hatcheries, the USFS Mt. Hood National Forest, and the US Fish and Wildlife Service Eagle Creek Fish Hatchery for the ninth year of district fish carcass placement projects. The carcasses were placed in locations and at numbers to mimic historic runs of coho and chinook salmon. 2004 was the second year of an effort to investigate the effects of the carcass program on overall watershed productivity. A variety of related parameters were measured including individual nutrient levels, periphyton biomass, benthic macroinvertebrate biomass, smolt abundance, and carcass retention. Carcasses were placed by helicopter in three tributaries of the upper Clackamas River and three tributaries of the upper Sandy River to maximize the number placed and distribution. Volunteers from the ANWST, NSA (Americorps), Tualatin River Keepers, Confederated Tribes of the Grand Ronde, and Reynolds Middle School placed carcasses by hand in the Sandy, Clackamas, Upper Tualatin, and Yamhill basins.

### **Mid Willamette STEP**

STEP volunteers placed salmon and steelhead carcasses in 14 streams and across 167 stream miles in the Santiam and Calapooia River basins. Because there are few facilities in this area

able to cost-effectively store the large number of carcasses, volunteers make themselves available whenever the fish are spawned at the ODFW Marion Forks and South Santiam Fish Hatcheries. The carcasses are placed by hand and many of the treated stream reaches are remote with difficult or very poor access.

STEP maintains a very active role in stream improvement efforts throughout the mid-Willamette basin. Many organizations are now involved in habitat restoration including cities, counties, other state and federal agencies, watershed councils, private industries, conservation groups, schools, and individual landowners. STEP works with all of these by identifying and prioritizing opportunities, bringing together project partners, providing project oversight or supervision, lending volunteers, or perhaps only by offering much needed technical expertise. STEP is also in a unique position among these many entities in that it can bring all aspects of restoration under one program. These include pre and post project monitoring, technical guidance, equipment, labor, access to funding, and outreach. Because much of the land in the mid-Willamette basin is privately owned, restoration efforts rely heavily on the cooperative participation of private landowners.

Restoration of fish passage remains a priority effort in the Willamette basin and STEP again this year worked closely with cities, counties, watershed councils, and private landowners to identify, prioritize and remove, replace or retrofit road crossings and dams that serve as barriers to fish migration. In many locations, STEP monitoring activities continue to provide the fish and habitat information needed to identify and prioritize problem culverts. STEP volunteers can also assist with the salvage of fish from an affected stream reach if a site needs to be de-watered before construction.

As an example of program partnerships with area watershed councils, STEP continues to work closely with the Long Tom Watershed Council and landowners in the Ferguson Creek subbasin on several coordinated stream habitat, riparian and passage restoration projects. The effort began with the Council's decision to take a more focused subbasin approach to habitat restoration. Ferguson Creek was chosen as the initial target stream because as a tributary of the lower Long Tom below Fern Ridge Reservoir it remains accessible to fluvial cutthroat trout migrating from the Willamette River. In 2003, STEP at the request of the Council led a tour of several landowner properties to discuss fish needs, habitat condition, and restoration opportunities. Several landowners then asked that the Council and STEP work with them to develop projects on their lands. Work in 2004 included two channel restoration efforts on agricultural lands, a large instream wood placement project on wooded rural/residential property, and a fish passage and riparian project on agricultural/forested land. All of the above projects were combined in a single grant request submitted by the Council that was funded by the Oregon Watershed Enhancement Board. These in combination with a joint project between ODFW, the Council, the ACOE and a private landowner to restore passage on the mainstem of the Long Tom above Ferguson Creek are leading the effort to restore native trout fisheries in the lower Long Tom Basin.

### **Upper Willamette STEP**

STEP joined with the Lost Creek Partnership to restore native riparian vegetation at Elijah Bristow State Park located near the confluence of Lost Creek and the Middle Fork Willamette River. Volunteers planted several hundred black cottonwood, creek dogwood, Pacific ninebark, snowberry, and Oregon ash at the site. The project received a temporary

water right that allowed water to be pumped from Lost Creek and into several small reservoirs where it was stored for hand-watering the plants. A STAC Mini Grant purchased the portable water pump and ensured that the plants would receive adequate water during the critical first summer. STEP volunteers will continue to maintain the project area during the summer of 2005.

A STEP stream and riparian restoration and demonstration project continued on privately owned land along an unnamed tributary to Lost Creek in the Middle Fork Willamette Basin. A team of two Percheron draft horses was used to place 40 donated cottonwood logs at six locations in a quarter mile reach of the small stream. The log placement was partially funded by a STAC Mini-Grant. The landowner is also monitoring a fish trap at the site and is working to remove exotic vegetation from the riparian area and replace it with native plant species.

### **North Coast STEP**

Volunteers from the ANWST and the local Boy Scouts battled blackberries and planted hundreds of trees in a riparian planting and maintenance project at the Mills Bridge angler access site on the Wilson River.

North Coast STEP used fish spawned as broodstock at local hatcheries for the district stream fish carcass placement program. Over 100 volunteers from the Rainland Flycasters, ANWST, Tillamook Guides Association, Rockaway Lions Club, and local schools helped to distribute over 30 tons of carcasses in streams throughout the North Coast area.

### **Mid Coast STEP**

STEP partnered with private landowners, the Mid-Coast and Siuslaw Watershed Councils, and several local, county, state, and federal agencies to restore fish habitat in Mill Creek in the Yaquina Basin, the North Fork Alsea River in the Alsea Basin, and Beaver Creek, Salmon River, the mainstem Siletz River, and Crooked Creek. The projects included instream wood placement, riparian restoration, and fish passage improvement efforts.

### **Umpqua STEP**

STEP plays a limited role in stream and riparian habitat restoration efforts in the Umpqua Basin. Two ODFW habitat restoration biologists are assigned to the Umpqua district to work with local watershed councils and both private and public landowners.

STEP volunteers placed fish carcasses for stream nutrient enrichment on the North Fork of the Smith River.

### **Tenmile, Coos, and Coquille STEP**

Habitat restoration efforts continue to be an important part of the volunteer program in the Tenmile, Coos, and Coquille STEP district and several projects were conducted during this past year.

In the Coquille Basin, the tidewater portion of the Coquille historically was a broad floodplain dominated by willow and provided very important winter rearing habitat for juvenile coho salmon. The lower basin was, however, long ago converted to farmland that filled the flood plain, removed most of the native riparian vegetation, and eliminated the

habitat critical to rearing coho. STEP restoration efforts during this past decade have focused on restoring the floodplain habitat in the lower basin.

Fish passage was improved on Fall Creek, a tributary to the South Fork Coos River. In 1997, passage was initially improved at a series of falls using an elaborate fishway and through the manipulation of a boulder pile that blocked fish passage. A large jump pool was created downstream of the boulder pile and a passage channel was constructed by removing key boulders and adding concrete. Subsequent high water events washed other boulders into the channel that have continued to hamper passage and delay the upstream migration of hundreds of coho, chinook, and steelhead. In 2004, volunteers spent two days selectively removing boulders from the channel in an effort to improve passage around the boulder pile. More work will be needed in 2005 as many fish are still delayed before reaching the fishway.

A riparian fence was repaired and reconstructed on Morgan Creek. The fence was originally installed in 1984 and has been very effective at keeping livestock from grazing along the stream corridor but horses grazing in an adjacent pasture recently damaged the fence.

Volunteers worked with staff to place over 10,000 salmon and steelhead carcasses in 14 district streams. Most of these carcasses were from fish that had returned to Coos Basin STEP hatchery facilities. Many were placed as part of an ongoing experiment to assess the long-term impacts of these nutrients on local salmon and steelhead populations.

### **Lower Rogue STEP**

STEP volunteers assisted with the removal of Jack Creek Dam, a concrete weir historically used to capture broodstock for the Chetco River Hatchery. Changes to the brood collection protocol and the inability of the fish ladder to pass juvenile fish resulted in the dam's removal. STEP volunteers over the past year have worked on restoring the stream and riparian area adjacent to the dam with additional projects planned for the coming year.

Volunteers from the CAF and OSCF assisted staff with the placement of fall chinook carcasses in the Chetco River and tributaries of the lower Rogue River. This is the first year that carcasses were placed in the Chetco and the seventh year for the lower Rogue. The fish were brood from Elk River Hatchery and the Indian Creek STEP facility

Students from Brookings and Gold Beach High Schools participated in a cleanup of the Chetco and lower Rogue Rivers. The students worked daily for two weeks in the fall to remove over 10 yards of trash from the Chetco River. The lower Rogue cleanup was a collaborative effort of the USFS, STEP, Mail Boats, Jerry's Rogue Jets, and several river guides who shuttled volunteers by boat to gravel bars located on the lower 35 miles of the river. Thirty Gold Beach High students and a number of adult volunteers removed more than 12 yards of trash and other debris from the river's gravel bars.

### **Upper Rogue STEP**

Large wood and boulder stream habitat structures were placed in the Elk Creek tributaries of Hawk, Sugiarpine, and Bitter Lick Creeks located near the community of Trail.

STEP volunteers from the Southern Oregon Fly Fishers, Trout Unlimited, Rogue Fly Fishers, USFS, the Upper Rogue Watershed Association, Middle Rogue Watershed Association,

Seven Basins Watershed Council, and the general public worked with staff to place over 1,700 coho salmon carcasses from Cole M. Rivers Hatchery in five streams in the Rogue River basin.

### **Eastern Oregon STEP**

Volunteers from the Central Oregon Flyfishers and the Crooked River Watershed Council donated over 300 hours to plant hundreds of willow and cottonwood trees along three miles of the South Fork Crooked River. The grazing of livestock along this reach had denuded the riparian vegetation. This led to the down-cutting of the stream channel and the loss of stream connectivity with the floodplain. The owners of the project properties are repairing sections of the fence to prohibit further over-grazing of the riparian area. STEP provided transportation for the volunteers, and supervision and materials in support of the project. The volunteers also assisted with the placement of three stream habitat structures in the project reach.

# FISH CULTURE

## Introduction

STEP volunteers conduct or assist with all stages of fish propagation, including collecting and spawning adult fish, incubating eggs, and rearing, acclimating, and/or releasing fry, juveniles, smolts, and adults. STEP volunteers often work in conjunction with ODFW fish hatcheries at one or many of the stages in the fish production cycle. In a few locations where there are no ODFW hatchery programs due to lack of facilities or hatchery capacity, STEP volunteers operate hatcheries that perform the entire rearing cycle from broodstock collection to release. Regardless of whether these activities are carried out in conjunction with an ODFW hatchery, STEP propagation efforts are guided by ODFW management objectives and are consistent with the guidelines, practices, and protocols outlined by hatchery management policy.

Oversight of STEP propagation projects occurs in a variety of ways. Initially, STEP propagation proposals go through an approval process at the local, Regional, and Fish Division levels within ODFW to ensure that the program will meet fish management objectives and is consistent with policies regarding potential impact to native fish populations. STEP propagation activities are integrally linked with ODFW fish management programs. Specific legal limitations regarding STEP also exist which, in addition to ensuring that the projects are in compliance with other applicable goals, policies, rules, and plans, limit the duration and size of projects. STEP propagation projects operate on 3-5 year cycles, depending on the type of project and fish species involved. Once the cycle is complete, the project to continue must be re-approved through a formal renewal process. In addition, STEP propagation projects cannot exceed 100,000 fish without approval by the Fish and Wildlife Commission. Despite certain STEP-specific legal requirements, STEP's importance to Oregon's fish resources does grant it some legal protection such as not having to obtain water rights to operate a facility as a STEP project is defined as a "beneficial use" of the state's waters. The STEP Biologists work closely with the volunteers to ensure that the facility complies with the applicable operating and reporting requirements for ODFW fish hatchery facilities and those of STEP. The program biologists also help carry out the project logistically, work with other ODFW staff to coordinate cooperative propagation efforts, and provide technical guidance. Most STEP fish propagation facilities are funded, built, operated and maintained by the volunteers, with ODFW assistance and oversight.

The purpose of STEP fish propagation programs is to rehabilitate or supplement populations of naturally produced salmon and trout and/or augment fisheries with hatchery fish. Thousands of volunteers have assisted Oregon's fisheries through their involvement in STEP and their donation of money, materials, equipment, and countless hours of time and labor. Without these efforts, ODFW's propagation ability would in many areas of the state be greatly diminished.

Many projects have more than a single purpose and often, or perhaps more importantly, serve as educational opportunities to increase public understanding and stewardship of Oregon's fish resources and the aquatic environment. STEP fish culture projects are generally grouped into the following types:

- Classroom egg incubation program projects that release unfed fry. The primary purpose of this program is education but, because fish are released into open waters,

the fish are managed and regulated as part of a production program and are included in this section of the report.

- Stream hatchbox projects that release unfed fry.
- Fish rearing projects. All activities included here involve feeding and caring for fish, though not all fish are necessarily marked.
- Projects that acclimate fish before release.
- Projects that collect adult broodstock.
- Miscellaneous activities including volunteer help at ODFW hatcheries for maintenance, broodstock collection, spawning, marking, stocking, and other duties, and salvage of wild fish.

The following is an overview of STEP fish culture projects from each of the STEP districts. These summaries are not intended to be comprehensive but instead reflect the range of STEP activities in that area. A summary of volunteer participation can be found under the “Fish Culture” category in Table 1 (Statewide Summary of STEP Participation). A summary of the numbers of fish released can be found in Figure 2 (STEP fish releases by STEP district and stage of fish development).

### **Lower Willamette STEP**

STEP again acclimated and released over 200,000 steelhead and spring chinook salmon smolts into the lower Willamette and Clackamas River basins. Volunteers assisted with all facets of the program including the installation and maintenance of the net pens, and the feeding and release of the acclimated fish.

Nearly 200 school classroom egg incubation projects and one individual hatchbox project incubated and released more than 80,000 unfed salmon and trout fry into 16 lakes, ponds, and streams in the lower Willamette area. Several local chapters of the ANWST and the Portland-area 4H support the classroom program by sponsoring participating schools throughout the Portland Metro area. The ANWST commitment includes the purchase of incubation equipment and the delivery of the fish eggs to each participating school.

### **Mid Willamette STEP**

For the past several years, all STEP egg incubation projects within the district were only for educational purposes and were not intended to contribute to fish production goals. However, STEP hatchbox fry were used in 2004 to assess the potential for re-introducing spring chinook salmon to the Middle Santiam and Quartzville Creek above Green Peter Dam. The fry releases were monitored to assess growth, survival, and the ability of the juvenile fish to negotiate Green Peter Reservoir during outmigration.

Schools from both rural and urban areas participated in 58 egg incubation projects raising rainbow trout and spring chinook salmon fry. The rainbow trout were released at selected locations scattered throughout the valley including reservoirs and local, isolated ponds. The fry stocking program in the ponds has had surprising success with the establishment of two quality trout fisheries where none had before existed. Spring chinook salmon fry were released into the North Santiam, South Santiam, and Calapooia River basins. As a means of fostering further public involvement with educational efforts along urban streams, many Salem area schools released their spring chinook salmon fry into Mill Creek.

The program tries to maintain close contact with each participating school. Eggs are delivered to the classrooms by staff or in many cases STEP volunteers where a brief presentation or question/answer period helps prepare the students for the project and convey the importance of their effort. The presence of an ODFW fish biologist or STEP volunteer in the classroom helps the students realize that their effort extends beyond the school and includes many other individuals and organizations.

Individual volunteers, members of the Senior Fishing Buddies, and members of the Albany Chapter ANWST now assist with the classroom egg incubation program. These volunteers have recruited and “adopted” a number of schools in their local areas. To these schools they provide information and incubation equipment, lend technical expertise, and assist during field trips to the release sites. The Senior Fishing Buddies have been particularly active in the Salem area where, with financial assistance from two STAC Mini Grants, they have placed incubators in over fifteen schools.

It is conservatively estimated that the classroom egg incubation program again reached well over 1,000 students in the STEP district this past year. It is likely that the actual number even exceeds this as many projects involve multiple classes or, in the case of smaller communities, the entire school. Many projects have benefited from significant donations of equipment or funds to buy equipment from numerous groups and individuals within the local communities, or from sponsoring groups.

### **Upper Willamette STEP**

Many of the district’s remote Cascade lakes are stocked annually with fingerling trout. Reduced funding for airplane or helicopter stocking has, however, made ODFW more dependent on volunteers to help stock fish in these waters. In 2004, over 100 youth and adult volunteers assisted staff with stocking more than 34,000 cutthroat and rainbow trout in 42 lakes. Volunteers included individuals, local angler groups, Boy Scouts, and students from the University of Oregon, Lane Community College, and OSU.

More than 9,000 spring chinook salmon eggs were incubated in 78 classroom projects. STEP volunteers also helped construct displays that were distributed to participating schools showing the development of the eggs to fry. The unfed fry were released by the individual projects at several sites in the upper Willamette Basin.

Volunteers from the Emerald Empire Chapter ANWST continued to operate a winter steelhead rearing facility on Letz Creek in the Siuslaw Basin. The objectives of the Letz Creek program are to develop a native winter steelhead broodstock and supplement the Siuslaw steelhead fishery. Volunteers from both Upper Willamette and Mid Coast STEP assisted with the program and contributed over 4,000 hours to capture brood stock, fertilize and incubate eggs, and rear and release the juvenile steelhead. Approximately 8,000 smolts were released this past year.

STEP worked with the McKenzie River Guides Association, and Willamette and Leaburg Hatcheries to stock over 35 contiguous river miles of the McKenzie with legal-size rainbow trout. The volunteers navigate the ODFW stocking boat downriver while the STEP Biologist



nets fish into the water. Seven guides led 17 stocking trips from late April to early September.

Volunteers from the McKenzie Flyfishers assisted with a project to trap and remove brook trout from Gold Lake. The brook trout have over-populated Gold Lake and were relocated to Charlton Lake in the Deschutes Basin in an effort to restore the Gold Lake rainbow trout fishery.

In an ongoing effort to control the northern pikeminnow population in Dexter Reservoir, Upper Willamette STEP partnered with the City of Lowell to hold a pikeminnow fishing derby in late July during Lowell's Blackberry Jam Festival. The popular fishing derby has been held each year since 1995. In advance of the festival, STEP volunteers operate a fish trap used to capture and individually mark ten pikeminnow. Cash prizes are awarded for any tagged fish subsequently caught by anglers during the derby. STEP is also using the project to help generate an estimate of the pikeminnow population in the reservoir.

### **North Coast STEP**

The Nestucca Anglers continued to operate the Rhoades Pond rearing facility, producing more than 72,000 fall chinook smolts for release into the Nestucca River and Three Rivers. Hundreds of volunteers donated over 3,600 hours collecting broodstock, and rearing and marking the juvenile fish.

The Tillamook Anglers volunteered nearly 4,500 hours to operate the Whiskey Creek STEP Hatchery, producing approximately 160,000 spring and fall chinook salmon smolts for release into the Trask and Wilson Rivers. The Tillamook Anglers also acclimated thousands of winter steelhead and spring chinook salmon smolts at the Hughey Creek pond.

Wild winter steelhead broodstock collection programs continued on the Wilson and Nestucca Rivers. Volunteer anglers from the ANWST, Nestucca Anglers, and the Tillamook Guides Association donated over 1,800 hours to collect nearly 200 adult winter steelhead. Steelhead caught by the anglers were placed in live boxes and transferred to the ODFW Trask and Cedar Creek Hatcheries where they were spawned then released.

### **Mid Coast STEP**

Volunteers assisted staff with the capture of wild adult fall chinook broodstock in the Yaquina River for the Yaquina Bay Hatchery program. The project maintains an adult capture, acclimation, and release facility cooperatively operated by the Port of Newport, ODFW, and STEP volunteers. The goal of the program is to generate a small sport fishery for fall chinook in Yaquina Bay. The program in 2005 will be moved to a new site at the Oregon Coast Aquarium.

The Depoe Bay Salmon Enhancement Commission continued a coho supplementation project on North Depoe Bay Creek. Eggs are incubated and fry short-term reared in floating net pens at the hatchery site located above the dam at Depoe Bay Reservoir. Pre-smolts are marked and then released into the reservoir to rear naturally before outmigration.

Mid Coast STEP partnered with the Siletz Tribe to cooperatively manage the coho conservation hatchery located on Rock Creek in the Siletz Basin. The program spawns

limited numbers of wild coho adults from selected Siletz River streams and then releases the offspring into tributaries where wild coho are absent or found in extremely low numbers.

Alsea River fishermen and guides assisted with the collection of wild winter steelhead broodstock by drift boat and bank angling. The STEP project will enhance and extend the winter steelhead sport fishery by developing and maintaining a new hatchery broodstock using the wild steelhead caught by anglers in the Alsea Basin.

Siletz River anglers and guides assisted with the collection of early returning wild winter steelhead by drift boat angling on the Siletz River. The STEP project will develop and maintain a hatchery steelhead broodstock using sport-caught wild fish to enhance and extend the Siletz River sport fishery.

Fifteen school classes in the Florence area participated in the classroom egg incubation program using local stocks of steelhead and coho salmon.

STEP winter steelhead smolt acclimation projects on Whittaker and Greenleaf Creeks have been very successful at reducing the straying of hatchery steelhead into wild fish spawning areas. Adult return rates, the condition of returning fish, and the contribution of project fish to the fishery have all improved in recent years as a result of the ongoing acclimation effort.

STEP volunteers assisted with the collection of winter steelhead broodstock at five fish traps in the Siuslaw Basin. As in past years, this was again a tremendously successful project that met egg production needs and produced nearly 100,000 smolts for the basin's hatchery steelhead program. The project includes a large outreach and education component.

Volunteers operated adult coho salmon traps at Little Woahink Lake and Munsel Creek. Coho captured at the Little Woahink site are passed above a dam that blocks all upstream fish passage. At the Munsel Creek trap, volunteers count and pass coho over a dam and then monitor fish use of an artificial channel constructed for spawning.

### **Umpqua STEP**

STEP acclimation sites constructed by volunteers in the Canyonville area were used to acclimate all of the 92,000 winter steelhead smolts released in the South Umpqua basin in 2004.

The UFA met its 2004 production goals for the fall chinook recovery program on the Calapooya River. The program released 171,000 unfed fry and 105,788 adipose fin clipped, coded-wire tagged pre-smolts. The goal of the program is to increase adult chinook returns from less than one fish-per-mile to over 10 fish-per-mile. This was the final year of program releases in the Calapooya. In 2005, the recovery program will move to Lookingglass and Olalla Creeks.

The new GRWB STEP floating weir trap on Mill Creek was very successful. In contrast to the high brood mortality experienced in 2003, the trap in 2004 allowed the program to capture enough chinook to meet the production goal. One hundred thousand fall chinook pre-smolts were coded-wire tagged and released in Winchester Bay. Anglers in the Winchester Bay area, and especially bank anglers, have been catching the program fish and

pressure has greatly increased during the last two years. GRWB STEP has been marking nearly all of the pre-smolts released since 1995. Of the 600 fall chinook that returned to Winchester Creek during 2003, over 95% of them were fin-clipped.

GRWB STEP partnered with the UFA to assist with fish production at Rock Creek Hatchery. The GRWB volunteers will collect and spawn fall chinook brood, transfer the eyed eggs to Rock Creek Hatchery, then will assist with the acclimation of the first group of fall smolts in 2005. The goal of the program is to provide more chinook for the Winchester Bay sport fishery and extend the fishery upstream to Reedsport. GRWB also assisted the UFA with the collection of brood fish for the UFA's fall chinook recovery program on Paradise Creek.

### **Tennile, Coos, and Coquille STEP**

Coos Basin STEP projects released unfed fry and pre-smolt fall chinook to complete their rearing in the under-seeded Coos Bay estuary. The program enhances both freshwater and ocean fisheries and is the source of approximately half of the fish currently harvested in Coos Bay. STEP also conducts augmentation projects for coho salmon and winter steelhead in the Coos Basin.

The Coos River fall chinook augmentation program continues to be successful. A statistical creel survey conducted in 1999 determined that about 50 % of the chinook harvested in the Coos Basin originate from the three STEP rearing facilities. While the contribution of hatchery chinook to the fishery is very high, the incidence of hatchery chinook straying to wild chinook spawning areas is relatively low. ODFW has been using the STEP trap facility on the South Fork Coos River to conduct a population estimate of chinook in the South Fork and has determined that less than 5% of the fish that spawn in the river are hatchery strays. In 2004, over 9,900 fall chinook salmon returned to the three fall chinook STEP facilities in the Coos. By comparison, only four chinook returned to Coos Basin STEP facilities in 1983.

Early fall rains in 2004 led to an early return of nearly 3,000 fish. Because of the earlier run timing, many of these fish were of excellent quality and were donated to the Oregon Food Bank. In most years, rainfall significant enough to raise stream flows and allow the salmon to migrate upstream does not occur until late October when the quality of fish is typically poorer.

Volunteers assisted with the collection of naturally produced salmon and steelhead broodstock through seining, trapping, and sport angling efforts.

The STEP Biologist coordinated the collection and distribution of salmon, steelhead and trout eggs from STEP or other ODFW hatcheries to district volunteers. From this distribution, more than 496,000 fry, and 2,700,000 pre-smolts and smolts were released from the 2003 brood year. For yearling salmon and steelhead, a total of 436,000 smolts were released from the 2004 brood year. The tracking of such a large fish culture program continues to be very time consuming for staff and the volunteers.

STEP conducted 23 egg incubation projects. Eggs were also distributed to participants in the district's growing classroom egg incubation program. Two new classroom aquaria were purchased for area schools this past year at a combined cost of nearly \$2,000. Many of the

students at the participating schools also assist with spawning adults at the STEP facilities that supply the program eggs.

Of the various district fish culture projects, the marking of fish prior to release involved the greatest number of volunteers. Over 100,000 juvenile salmon were marked in 2004 to evaluate the various release groups. Volunteers assisted with the marking of all chinook released from the Millicoma Interpretive Center with several student groups having provided most of the labor. Since the program began, students have marked over 1,000,000 juvenile chinook salmon released in the Coos Basin. Although the experience is certainly valuable to the students, the contribution of the schools to the marking program is significant and includes their time, labor, and transportation.

In summary, more than 570 adult volunteers worked with staff to conduct a total of 28 STEP fish rearing and acclimation projects in the Tenmile, Coos, and Coquille district in 2004. Although these projects have placed a considerable demand on staff and volunteers, they continue to play an important role in expanding angling opportunity in the district.

### **Lower Rogue STEP**

STEP volunteers again assisted with the collection of wild brood fish for the Chetco fall chinook program, an effort that initially began in the 1970's. The fish are captured at two locations at the head of tidewater on the Chetco River - Morris Hole and Tide Rock - where they stage and wait for the first fall rains that will allow them to migrate upstream. The adult chinook are then held and spawned at Elk River Hatchery where the offspring are reared for release in the smolt program. The annual collection goal for this program is currently 300 adults and results in the production of 150,000 smolts.

Volunteers from the OSCF and Cal-Or Enhancement hosted an angling derby to collect winter steelhead broodstock from the Chetco River. The OSCF staffed a number of sites where the participating fishing guides could drop-off their live steelhead catch. The fish were then transported to Elk River Hatchery where they were spawned. The Cal-Or derbies also help to raise money for local fish enhancement efforts.

Volunteers assisted with the collection of wild fall chinook broodstock in the lower Rogue River for spawning at the Indian Creek STEP Hatchery. The resulting offspring were included in a smolt release program to supplement the lower Rogue fall chinook fishery. The smolts reared at Indian Creek are marked with coded-wire tags to monitor adult returns and contribution to fisheries. Eggs excess to the smolt program needs are released as unfed fry in the lower Rogue tributaries of Edson Creek, Foster Creek, and Saunders Creek

Local Boy Scouts released 2,000 fall chinook fry into Pea Creek, a tributary of Euchre Creek. The current rehabilitation plan for Euchre Creek allows for a release of up to 10,000 fry. This program will continue until a more comprehensive rehabilitation plan is developed for the basin.

### **Upper Rogue STEP**

Nearly 50 volunteers worked more than 300 hours and drove 1,200 miles to safely relocate over 5,000 fish to areas of refuge through the district fish salvage program.

The classroom egg incubation program was a highlight of Upper Rogue STEP fish culture activities in 2004. More than 8,700 spring chinook salmon eggs were distributed in the fall to 20 classes from schools in the Ashland, Medford, and Grants Pass areas. These projects released nearly 7,000 chinook fry into the Rogue River near Grants Pass and the Touvelle Bridge near Medford.

### **Eastern Oregon STEP**

Rainbow trout eggs were distributed to 72 schools participating in the district's classroom egg incubation program. The unfed fry were released in isolated ponds or standing waters currently stocked with larger hatchery trout. The large program relies on the volunteer and financial assistance provided by the Central Oregon Flyfishers, Sunriver Anglers, Klamath Chapter of Trout Unlimited, and the Klamath Country Flycasters.

STEP volunteers stocked fish in several eastern Oregon backcountry lakes. Twelve volunteers from the High Desert Trail Riders used mules and horses to carry 3,000 fingerling rainbow trout into Blue Lake in the Gearhardt Mountains. Volunteers with the Central Oregon Llama Association packed 2,000 trout fingerlings on llamas over two miles for release into Doris and Blow Lakes, two popular lakes in the central Oregon Cascades.

For three days each week during the trout spawning season, students from Prineville High School worked with staff biologists to operate the Ochoco Creek fish trap. The trap collected rainbow trout from Ochoco Reservoir that were spawned and used as brood at the Oak Springs Hatchery. Progeny from this program will be stocked in the South Fork Crooked River and several Crooked Basin lakes.

Table 1. Statewide Summary of STEP Participation.

Project Category	Projects	Measure <sup>a</sup>	Volunteers			
			Youth	Youth Hours	Adults	Adult Hours
Development	396	>20,000	1,235	8,486	2,504	18,545
Characterization	130	496	488	1,253	478	9,340
Habitat	129	273	214	1,236	493	3,992
Fish Culture <sup>b</sup>	121		3,147	21,653	2,549	52,403
Classroom	416	>11,000			301	1,598
Total	1,192		5,084	32,628	6,325	85,878

<sup>a.</sup> Measures are as follows:

Development – number of adult and youth participants in STEP development activities.

Characterization – distance surveyed in miles; if point sampling occurred, such as with a trap, no mileage is included.

Habitat – distance restored in miles; if point restoration occurred, such as with fish passage improvement, no mileage is included.

Fish Culture, Classroom – the number of students participating in the classroom egg incubation program.

<sup>b.</sup> Fish Culture includes the following projects: hatchbox, fish rearing, acclimation, broodstock collection, fish salvage, and volunteer assistance at ODFW hatcheries (e.g., maintenance, fish marking, fish stocking).

Figure 1. STEP fish releases by species and stage of fish development. Unfed fry releases include classroom incubator fry. Smolt releases include acclimated fish.

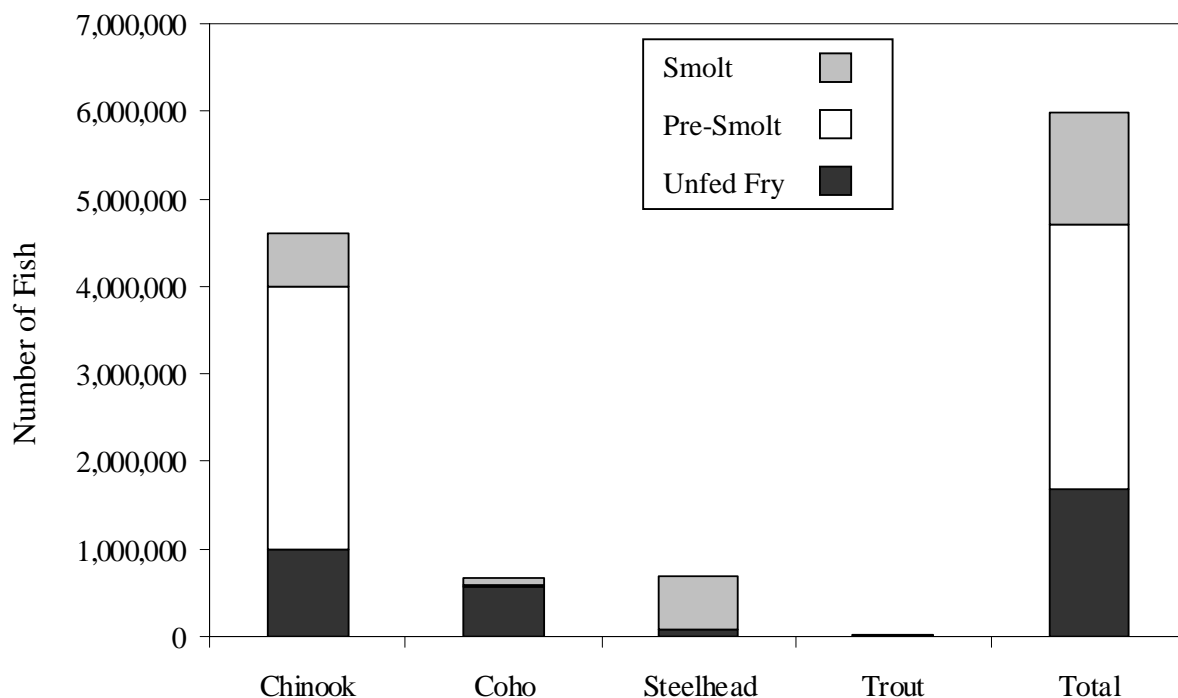
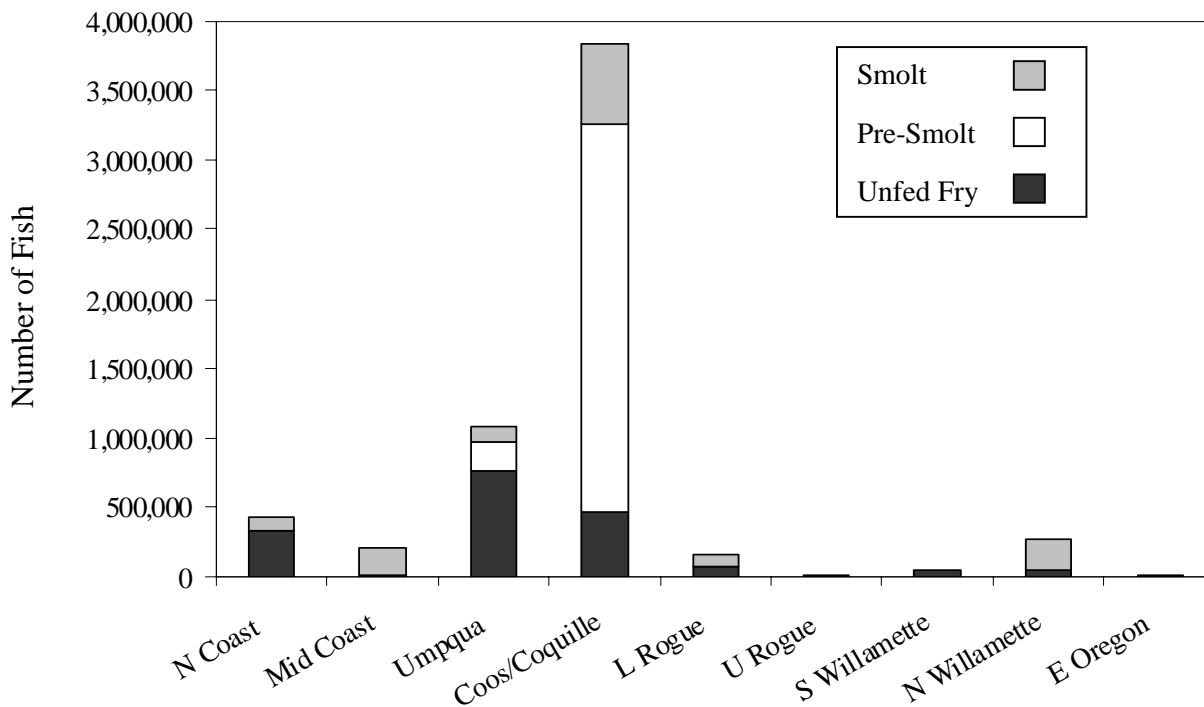


Figure 2. STEP fish releases by STEP district and stage of fish development. Unfed fry releases include classroom incubator fry. Smolt releases include acclimated fish.



## **APPENDICES**





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## Salmon and Trout Enhancement Program Advisory Committee (STAC)

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Representing	Member	Appointed	Term Expires
Garibaldi – Pacific City	Russ Patterson	6/1/95	5/31/05
Lower Willamette – Portland Metro	Norman Ritchie	10/1/03	9/30/07
Lower Willamette – Portland Metro	Kaitlin Lovell	8/1/03	7/31/07
Lincoln City – Florence	Tom Petersen	8/1/03	7/31/07
Seaside – Astoria – Lower Columbia	Vacant		
Mid Willamette Valley	Cindy Heller	8/1/01	7/31/05
Upper Willamette Valley	Ralph Perkins	6/1/97	5/31/05
Roseburg	Dave Grosjaques	6/1/95	5/31/05
Reedsport – Bandon	Armand Pena	8/1/03	7/31/07
Gold Beach – Brookings	Dick Sutter	2/1/01	1/31/05
Medford – Grants Pass	Wayne Brown	6/1/95	5/31/05
NE Oregon	Paul Cilvik	6/1/97	5/31/05
Central – SE Oregon	Dick Mayer	2/1/01	1/31/05

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Note: A maximum length-of-service policy of two 4-year terms was implemented in 1996.

## Partial List of Groups that Work with STEP

The following is a list of volunteer organizations, agencies, and other groups that work with STEP. Due to the large number of STEP participants, it is possible that some groups were inadvertently left off of this list. Please contact the STEP Coordinator at 503-947-6232 if your group has been overlooked. The hundreds of elementary, middle, and high schools participating in classroom egg incubation or other educational activities were not included in this list. Also excluded are the universities and community colleges whose students intern with, or volunteer for the program. Although we appreciate all of their efforts, it is also not possible to list the names of the thousands of affiliated and unaffiliated individuals that volunteer with STEP.

### Organizations

- 4-H
- Americorps
- ANWST - Association of Northwest Steelheaders
- ANWST - Albany Chapter
- ANWST - Emerald Empire Chapter
- ANWST - McLoughlin Chapter
- ANWST – Portland Chapter
- ANWST - Salem Chapter
- ANWST - Sandy River Chapter
- ANWST – SW Oregon Chapter
- ANWST - Tualatin Valley Chapter
- Backcountry Horsemen
- Bandon Fishermen's Association
- Bay Area Sportsmen's Association
- Boise Cascade
- Boy Scouts of America
- Campbell Group
- Cascade Family Flyfishers
- Central Oregon Flyfishers (COF)
- Central Oregon Llama Association
- Coos River STEP
- Coquille River STEP
- Curry Anadromous Fishermen (CAF)
- Depoe Bay Salmon Enhancement Commission
- Discovery Center
- Ducks Unlimited
- Ed Wood Engineering
- Eel STEP
- Fish & Feathers Club
- Florence STEP
- Friends of Garden Lake Park
- Gardiner-Reedsport-Winchester Bay STEP
- Girl Scouts
- Gold Beach Rod & Gun Club
- Hatfield Marine Science Center
- High Desert Trail Riders
- Izaak Walton League
- Kid's Zone
- Klamath County Flycasters
- McKenzie Flyfishers
- McKenzie River Guides Association
- Medford Eagles
- Miami Anglers
- Millicoma STEP
- Mount Hood Community College
- Mount Hood Nordic Club
- Nestucca Anglers
- North Santiam River Guides
- Northwest Service Academy
- Opal Springs Facility
- Oregon South Coast Fisherman (OSCF)
- Oregon Trout
- Oregon Wildlife Heritage Foundation
- Passport to Fishing Volunteers
- Pepsi
- Pixel Works
- Polk County Sportsmen
- Rainland Flycasters
- Rockaway Lions Club
- Rogue Fly Fishers
- Rogue River Guides Association
- Salemtowne Association
- Salmon Corps
- Salmon River Keepers
- Santiam Flycasters
- Senior Fishing Buddies
- Siletz Tribe
- Simpson Timber
- Southern Oregon Bass Club
- Southern Oregon Fly Fishers

- Starker Forests
- Student Conservation Association
- Sunriver Anglers
- Tenmile STEP
- Tillamook Anglers
- Tillamook Bay Yacht Club
- Tillamook Guides Association
- Trail Creek Residents
- Trout Unlimited
- Tualatin River Keepers
- Umpqua Fishermen's Association
- Westfly
- Wolf Creek Job Corps

### **Government**

- Association of Soil & Water Conservation Districts
- Benton County
- Bureau of Land Management
- City of Albany
- City of Canyonville
- City of Corvallis
- City of Dallas
- City of Depoe Bay
- City of Eugene
- City of Lincoln City
- City of Newport
- City of Salem
- City of Sweet Home
- City of Waldport
- Confederated Tribes of the Grand Ronde
- Cow Creek Band of Umpqua Tribe of Indians
- Lane County
- Lincoln County Conservation District
- Lincoln County Road Department
- National Oceanic and Atmospheric Administration (NOAA) Fisheries
- Oregon Department of Corrections
- Oregon Department of Environmental Quality

- Oregon Department of Forestry
- Oregon Department of Transportation
- Oregon Division of State Lands
- Oregon Parks and Recreation Department
- Oregon State Police
- Oregon Youth Conservation Corps
- Pacific States Marine Fisheries Commission
- US Army Corps of Engineers
- USDA Natural Resource Conservation Service
- US Fish and Wildlife Service
- US Forest Service

### **Watershed Councils**

- Calapooia Watershed Council
- Coast Fork Willamette Watershed Council
- Crooked River Watershed Council
- Glenn/Gibson Watershed Council
- Long Tom Watershed Council
- Lost Creek Watershed Group
- Lower Nehalem Watershed Partnership
- Marys River Watershed Council
- McKenzie River Watershed Council
- Mid Coast Watershed Council
- Middle Fork Willamette Watershed Council
- Middle Rogue Watershed Association
- Mohawk River Watershed Partnership
- North Santiam Watershed Council
- Rickreall Watershed Council
- Seven Basins Watershed Council
- Siuslaw Watershed Council
- South Santiam Watershed Council
- Umpqua Basin Watershed Council
- Upper Nehalem Watershed Council
- Upper Rogue Watershed Association
- Williams Creek Watershed Council
- Yachats Watershed Council