SALMON AND TROUT ENHANCEMENT PROGRAM (STEP)

2007-2008 Annual Progress Report

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This project was partially financed with funds obtained through the Federal Aid in Sport Fish Restoration Program.

CONTENTS

BACKGROUND AND SUMMARY

This report summarizes the activities and accomplishments of the Salmon and Trout Enhancement Program (STEP) from October 1, 2007 to September 30, 2008. The Oregon Legislature established STEP in 1981 as 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". Although this goal will not be achieved by the program acting alone, annual volunteer efforts through STEP to enhance fisheries and restore habitats lend critical support to the management programs of ODFW and contribute to the more extensive statewide efforts toward fish and watershed restoration under the Oregon Plan for Salmon and Watersheds.

The role of STEP within ODFW is defined by Oregon Revised Statute (Oregon Revised Statutes 496.430 through 496.465) and Oregon Administrative Rule (Oregon Administrative Rules 635-009-0090 through 635-009-0150) specific to the program. Program activities are also guided by broader ODFW fish and habitat management policies including the Native Fish Conservation Policy, Fish Hatchery Management Policy, and the Fish Health Management Policy. These policies establish direction for the broader ODFW fish and habitat management efforts that include STEP, provide support for a wide range of STEP activities, and set biological impact thresholds. The policies also allow STEP to work with other ODFW programs for which STEP can provide important volunteer and educational support.

The types of projects conducted through STEP reflect the diverse ways that volunteers can assist with fish and habitat management needs throughout Oregon. The issues and priorities within individual watersheds are often unique to that 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*** informs the public about Oregon's salmon and trout resources, their habitats, and STEP. Projects include classroom incubators (also known as the "Fish Eggs to Fry Program"), presentations, classes, volunteer training, tours, displays, printed materials, and equipment construction and maintenance.

- ***Inventory and Monitoring*** activities characterize fish populations and their habitats. Projects include stream and riparian habitat surveys and other methods used to study, monitor, or inventory fish life history, presence, 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. This category also includes aesthetic improvements to lakes and streams achieved through the Keep Oregon's Rivers Clean (KORC) fishing line and tackle recycling program.

- ***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. This category also includes fish rescued, transplanted, or reintroduced.

STEP is funded by a combination of the U.S. Fish and Wildlife Service (USFWS) Sport Fish Restoration (SFR) grant program and ODFW funds (75% federal with 25% state match). The program has one full-time coordinator and one part-time administrative assistant located in the ODFW headquarters office in Salem. It is implemented in the field by eleven STEP biologists (nine 1.0 FTE and two 0.5 FTE) located throughout the state.

In addition to agency staff, the 13-member STEP Advisory Committee (STAC) is comprised of citizens appointed by the Governor. The Committee advises the Fish and Wildlife Commission and ODFW on policy and the implementation of STEP, and the Committee Chair presents the STEP annual progress report to the Commission. The Committee also administers the STAC Mini-Grant Program, funded through a $25,000 biennial grant from the ODFW Fish Restoration and Enhancement Program. The Mini-Grants are available in amounts up to $750 for projects that further the goals of STEP and are reviewed for approval by STAC at their quarterly two-day meetings. From October 2007 to September 2008, meetings were held at Newport, Salem, Cascade Locks and Gold Beach.

One new STAC appointment was made during the reporting period; Bill Hastie of Salem was chosen to represent the Mid-Willamette district.

Within each watershed management district, the STEP biologist fills 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, private landowners, schools, individual students, and other state, federal, and local government agencies. Through STEP, these individuals and organizations work with ODFW to conduct community-based watershed restoration and species recovery efforts throughout Oregon.

The following summarizes accomplishments of the program in 2007-08:

- Over 86,000 people participated in STEP training, classes, tours, presentations or workshops, or visited STEP activities or displays at public events (Table 1). These activities involved over 4,106 youth and adult volunteers. In addition, 520 individual Fish Eggs-to-Fry classroom projects were conducted, reaching over 15,502 students.

- Over 1,000 volunteers contributed 11,225 hours to participate in 93 projects to inventory and monitor fish populations, assess sport fisheries, conduct fish passage inspections, and survey habitat in streams and rivers across the state (Table 2).

- Approximately 826 miles of waterways were improved for fish use by 614 volunteers through fish passage, instream, riparian, and fish carcass placement projects and the KORC program (Table 3).

- STEP volunteers assisted with rearing and releasing approximately 4,978,000 Chinook salmon, coho salmon, steelhead, and trout for enhancement or augmentation purposes; 2,690,000 of these fish were reared (fed and cared for) before release, and over 6,389 broodstock fish were collected (Table 4).

As indicated by the amount of work accomplished, volunteers made a substantial contribution to STEP and ODFW. Because STEP activities are integral to accomplishing the Department's fish management objectives, ODFW staff also contributes time and resources to the program beyond what is funded by the SFR grant. Highlights of the 2007-08 statewide volunteer efforts include:

- 6,800 youth and 5,704 adult volunteers in Oregon participated in STEP activities.

- Volunteers participated in an estimated 916 projects, totaling 111,345 hours.

- Using the estimated dollar value of $19.51 for volunteer time for Oregon in 2007, the value of STEP volunteer hours was $2,172,340.

Since the program was established in 1981, more than 292,662 adult and youth volunteers (Figure 1) have contributed more than 2.6 million hours (Figure 2) to an estimated 28,920 STEP projects. This data does not include the many additional adult and youth who have participated in presentations, workshops, field tours, or classroom projects conducted through STEP.

For this report, each STEP biologist provided a narrative that describes their district and an overview of activities in that district for each of the four main program components (education and program development, inventory and monitoring, habitat improvement, and fish culture).

The appendices include the following program information:

- A list of the current STAC members (Appendix 1)
- A list of the current STEP biologists (Appendix 2)
- A partial list of the schools that work with STEP (Appendix 3)
- A partial list of the groups and organizations that work with STEP (Appendix 4)

Table 1. Education and development activities, participation, and volunteer effort by STEP district, 2007-08. Activities were defined as those projects having at least one participant or volunteer; figures in parentheses indicate the number of Fish Eggs-to-Fry classroom incubator projects.

EDUCATION AND DEVELOPMENT

			Volunteers			
STEP District	Activities	Participants	Youth	Youth hours	Adults	Adult hours
Coos-Coquille	73 (10)	11,362	2	2	729	3,004
Eastern Oregon	36 (75)	6,822	13	106	109	1,451
Lower Rogue	47 (8)	4,838	11	63	170	999
Mid-Coast	46 (10)	2,985	697	2,346	417	2,051
Mid-Willamette	89 (95)	9,305	2	3	93	623
North Coast	22 (14)	21,199	2	12	329	2,642
North Willamette	12 (190)	15,134	30	180	366	9,841
Umpqua	67 (10)	9,566	102	676	586	7,057
Upper Rogue	27 (23)	1,320	-	-	52	2,298
Upper Willamette	13 (85)	4,073	3	12	52	308
Total	432 (520)	86,604	862	3,400	2,903	30,274

Table 2. STEP inventory and monitoring activities, miles affected and surveyed, and volunteer effort, 2007-08. Activities were defined as those projects having at least one participant or volunteer.

INVENTORY AND MONITORING

				Volunteers			
STEP District	Activities	Miles affected	Miles surveyed	Youth	Youth hours	Adults	Adult hours
Coos-Coquille	2	28	28	62	240	62	354
Eastern Oregon	12	-	55	-	-	71	1,126
Lower Rogue	10	260	5	98	248	68	1,112
Mid-Coast	12	9	16	321	556	96	3,332
Mid-Willamette	21	-	8	110	445	20	109
North Coast	3	-	65	-	-	27	542
North Willamette	-	-	-	-	-	-	-
Umpqua	7	-	3	40	320	36	1,060
Upper Rogue	5	1	1	-	-	28	621
Upper Willamette	21	-	2	2	73	45	1,087
Total	93	298	183	633	1,882	453	9,343

Table 3. Habitat restoration activities, miles affected and restored, and volunteer effort by STEP district, 2007-08. Activities were defined as those projects having at least one participant or volunteer.

HABITAT

				Volunteers			
STEP District	Activities	Miles affected	Miles restored	Youth	Youth hours	Adults	Adult hours
Coos-Coquille	2	1	-	95	570	75	500
Eastern Oregon	1	2	-	-	-	11	55
Lower Rogue	5	18	2	35	155	22	104
Mid-Coast	4	2	6	-	-	33	228
Mid-Willamette	11	144	-	2	8	28	433
North Coast	8	96	1	10	76	46	540
North Willamette	32	500	-	140	700	55	362
Umpqua	2	11	1	-	-	2	24
Upper Rogue	5	48	-	-	-	44	241
Upper Willamette	7	4	1	3	18	13	78
Total	77	826	11	285	1,527	329	2,565

Table 4. Fish culture activities and volunteer effort by STEP district, 2007-08. Activities were defined as those projects having at least one participant or volunteer; figures in parentheses indicate the number of Fish Eggs-to-Fry classroom incubator projects. For classroom incubation projects, this table reflects only the number of fish reared and released. Participation and volunteer efforts for the classroom incubator program were included under education and development (Table 1).

FISH CULTURE

		Number of fish				Volunteers			
STEP District	Activities	Broodstock collected	Incubated	Reared	Released	Youth	Youth hours	Adults	Adult hours
Coos-Coquille	38 (10)	4,910	2,160,867	1,591,550	2,849,256	4,068	24,045	899	15,306
Eastern Oregon	75 (75)	-	14,800	14,800	14,800	-	-	-	-
Lower Rogue	15 (8)	471	110,912	72,481	259,623	8	84	105	4,457
Mid-Coast	26 (11)	435	171,221	39,619	212,221	264	807	198	4,212
Mid-Willamette	60 (95)	-	24,850	-	24,850	-	-	-	-
North Coast	24 (14)	330	341,937	136,734	337,783	80	240	378	3,573
North Willamette	27 (190)	-	111,000	785,000	896,000	-	-	82	685
Umpqua	20 (10)	243	73,357	50,234	218,998	600	700	191	7,084
Upper Rogue	28 (23)	-	7,000	-	3,963	-	-	25	281
Upper Willamette	2 (85)	-	10,000	-	160,693	-	-	141	880
Total	315 (521)	6,389	3,025,944	2,690,418	4,978,187	5,020	25,876	2,019	36,478

Figure 1. Number of volunteers who participated in STEP activities, 1981-2008. Values for 1981-1990 and 1993 are estimates.

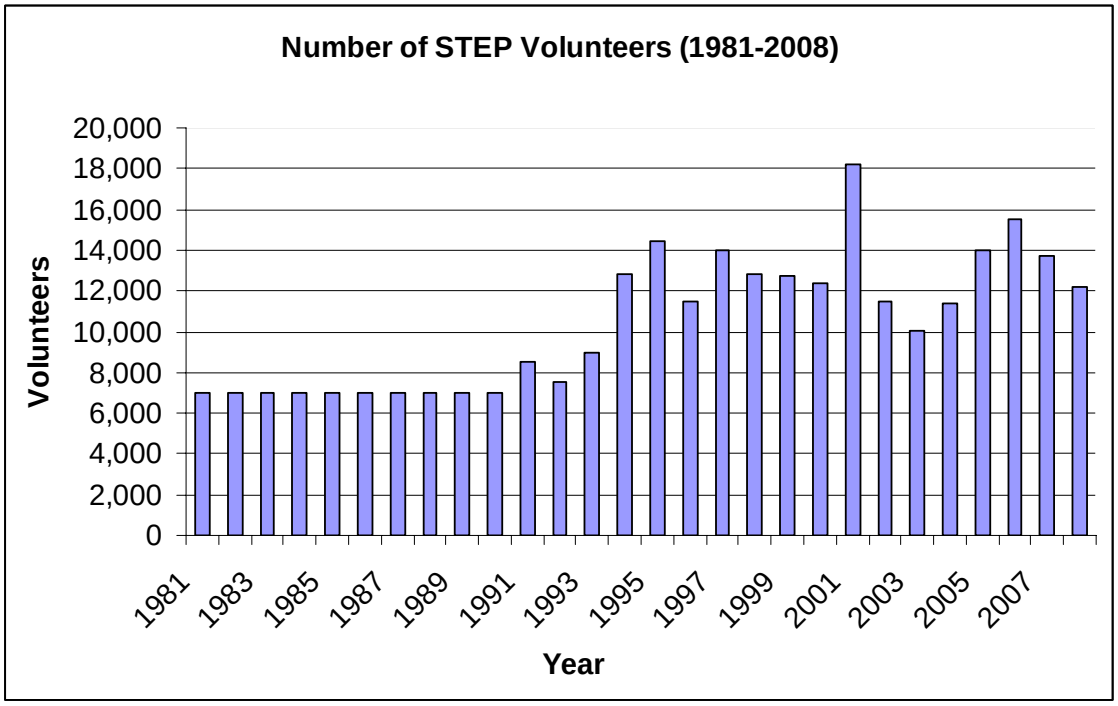
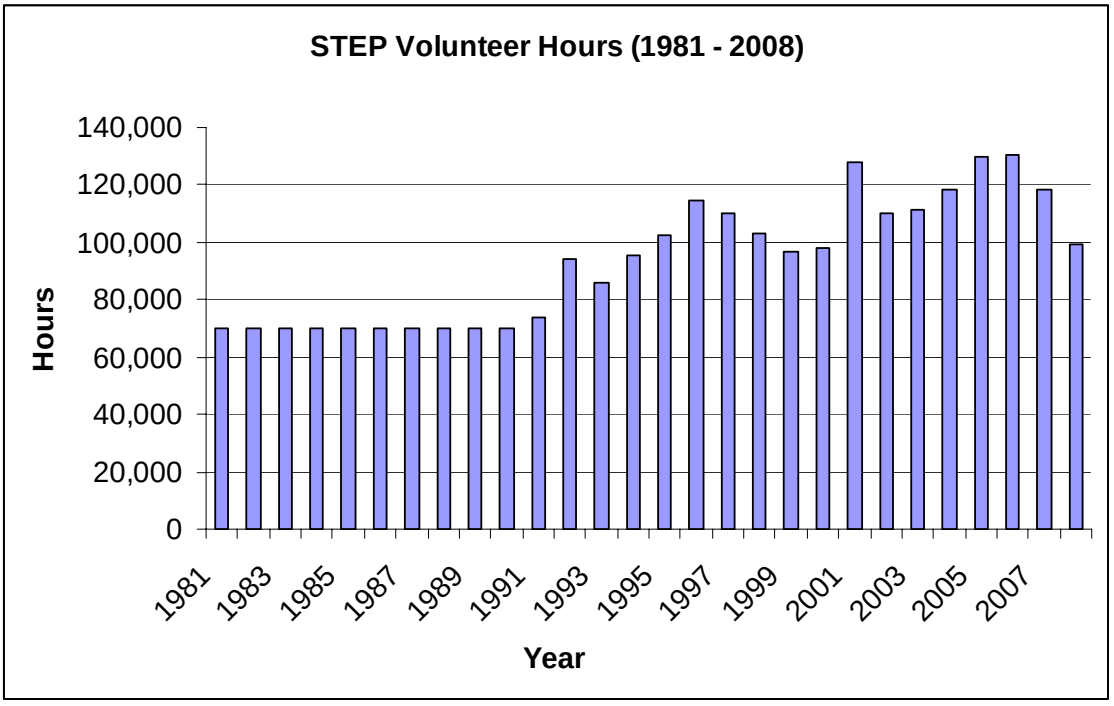


Figure 2. Hours contributed by volunteers towards STEP activities, 1981-2008. Values for 1981-1990 and 1993 are estimates.



STEP DISTRICT DESCRIPTIONS

Northwest Region

Lower Willamette STEP.....*Jeff Fulop, STEP Biologist*
Todd Alsbury, District Fish Biologist
Tom Murtagh, District Fish Biologist

Lower Willamette STEP covers the Department's North Willamette Watershed District (NWWD), and with the Portland metropolitan area inside its boundaries, has the largest population of any STEP district in Oregon. The large angling population presents the district with the challenge of meeting the varied needs of a broad and changing demographic. There are also numerous fish management constraints associated with conservation and recovery of native fish species and species listed under the Endangered Species Act (ESA).

The district covers waters from the eastern slopes of the Coast Range east to Mt. Hood, and from the city of Clatskanie south to Salem. The larger river basins include the Columbia, Willamette, Sandy, Clackamas, Tualatin, Molalla, Yamhill, and Pudding and their many tributaries. The varied landscape includes farmland, urban areas, forest lands, mountains, and wetlands. Fish species include salmon, steelhead, a variety of trout, and sturgeon. There is also a wide diversity of warmwater angling opportunities with several species of warmwater game fish present in the district.

Population growth along with the associated development and urban sprawl, and the ever-changing constituency continue to place considerable strain on the natural resources. District staff strive to maintain a balance between fish and wildlife protections, continued opportunities in fishing, hunting or outdoor viewing enjoyment, while meeting the new demands on the resources associated with rapid population growth and development.

Mid-Willamette STEP ..... *Karen Hans, STEP Biologist*
Steve Mamoyac, District Fish Biologist

The Mid-Willamette STEP district is a geographically diverse area in the South Willamette Watershed District (SWWD) 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.

In spite of the growing human population and resulting changes to the landscape the Willamette River Basin continues to support a diversity of fish and angling opportunities. Native game fish species present in the district include spring Chinook salmon, winter steelhead, and rainbow and cutthroat trout. Several salmonid species have also been introduced including fall Chinook salmon, coho salmon and summer steelhead. Although the focus of STEP efforts in this area are upon the native salmonids, the program through its educational, monitoring and habitat efforts also provides benefits to basins and their native fish populations.

A failure to recognize the importance of watershed rather than just stream health has led to the degradation and loss of aquatic habitats across Oregon. In this area, one of the results has been federal listings under the Endangered Species Act of the Mid-Willamette's two native stocks of salmon and steelhead. In response, the State of Oregon and its citizens have initiated a comprehensive and cooperative community-based approach to watershed restoration under the Oregon Plan. Although all ODFW programs have an important role in this effort, STEP finds itself uniquely situated in that its responsibilities include many of the major components of the Oregon Plan. Most importantly, the foundation of STEP is community involvement with these activities. The focus of STEP in this District has been therefore to involve area groups, schools and individuals in all aspects of ODFW's local fish management efforts.

As the population is large and still growing in this area, the STEP efforts continually emphasize outreach and education in the Mid-Willamette basin. This is achieved in-part through direct community involvement with many ODFW activities but particularly monitoring and inventory efforts and educational programs. Adult and youth 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, STEP Biologist*
Jeff Ziller, District Fish Biologist

The Upper Willamette STEP district coordinates volunteer efforts to maintain, restore and monitor native populations of salmon and trout within the headwaters of the Willamette River. The major river systems include the McKenzie, Middle Fork Willamette and the Coast Fork Willamette. Spring Chinook salmon are the only anadromous salmonids native to the area, however, resident and/or fluvial populations of rainbow, cutthroat and bull trout are also found within the district. Spring Chinook salmon and bull trout are federally listed as "Threatened" under the Endangered Species Act (ESA).

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

A variety of individuals and area organizations participate in the STEP program including the McKenzie Flyfishers, Cascade Family Flyfishers, Emerald Empire Chapter of the Association of Northwest Steelheaders, Trout Unlimited, Coastal Conservation Association, McKenzie River Guides Association, Backcountry Horsemen, three watershed councils and one watershed partnership. ODFW staff regularly attends meetings of these groups to provide information about our agency, answer questions and to recruit new volunteers. Other volunteers are recruited from area schools, universities, and a variety of youth groups.

North Coast STEP..... *Tracy Crews, STEP Biologist*
Chris Knutsen, District Fish Biologist

The North Coast STEP area includes all of the coastal basins extending from Neskowin Creek north to the Columbia River, and from the lower Columbia River tributaries to Plympton Creek. The North Coast STEP 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 area have a high interest in fish culture programs. STEP volunteers operate two fish rearing facilities and one acclimation pond, and they provide key support to several ODFW hatcheries. The area also has a small hatchbox program using spring and fall Chinook salmon and a growing classroom egg incubation program involving students from seven school districts. Staff works closely with a number of watershed councils, educators, angling groups, and civic organizations throughout the district.

Mid-Coast STEP .....*James Ray, STEP Biologist*
George Westfall, Assistant Fish Biologist
Bob Buckman, District Fish Biologist

All of the central Oregon coast watersheds from Salmon River (Cascade Head) south to the Siuslaw River are included in the Mid-Coast STEP area. This area encompasses several large river drainages including the Salmon, Siletz, Yaquina, Alsea, and Siuslaw rivers; a number of smaller direct ocean tributaries that support significant salmon and trout populations such as the Yachats River, Beaver, Big, Tenmile and Cummins Creeks; and Siltcoos and Tahkenitch Lakes, the two large coastal lakes of significant importance for coho salmon. Mid-Coast waters are highly diverse in terms of salmonid habitat usage and extend from the headwater streams on the western slopes of the Coast Range downstream to the coastal estuaries.

James Ray has lead responsibility for the area program but George Westfall, an ODFW Assistant District Fish Biologist based in Florence, performs STEP duties in the Siuslaw Basin and other waters south to the Umpqua Basin.

The Mid-Coast STEP works with area communities to undertake a diverse range of projects in fisheries management and conservation, and has shared successes with those communities. However, changing demographics and population increases will necessitate continued efforts. The Oregon Coast is continually attracting more people that tend to bring additional pressures on the district's natural resources. Education and outreach has always been a central part of the Mid-Coast program, but STEP will be emphasizing this further in coming years with a focus on youth education. Education, particularly in field settings where participants are immersed in the natural system, increases awareness of important ecological issues and fosters a sense of stewardship. In addition to education, Mid-Coast STEP will be further developing its participation in habitat restoration activities with communities and local landowners.

Southwest Region

Umpqua STEP..... *Greg Huchko, STEP Biologist*
Laura Jackson, District Fish Biologist

The Umpqua Watershed and STEP area encompasses Douglas County and extends from Diamond Lake in the high Cascades to the Pacific Coast at Reedsport. Douglas County is the fifth largest county in the state, and the Umpqua watershed drains 3.2 million acres of land, and is the second largest coastal watershed in Oregon. About 90% of the land is forested and approximately 51% is publicly owned. The area is home to more than 100,000 people with Roseburg having the largest population of more than 20,000.

The Umpqua Basin supports runs of coho salmon, spring and fall Chinook salmon, and winter and summer steelhead. Other angling opportunities include rainbow trout at Diamond Lake, brook trout at various Cascade lakes, and a number of reservoirs that are stocked with trout and support warmwater fish. STEP volunteer efforts range from educational projects and assistance with high lakes stocking, to enhancing winter steelhead and fall Chinook salmon fisheries.

Tenmile, Coos, and Coquille STEP ..... *Gary Vonderohe, STEP Biologist*
Tom Rumreich, STEP Biologist
Mike Gray, District Fish Biologist

The Tenmile, Coos, and Coquille STEP area is located on the southern Oregon coast and is recognized as having been the birth place of STEP over 26 years ago. The area is bordered on the north and east by the Umpqua Basin and by the New, Sixes, and Elk Basins to the south. The 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 watersheds have long inter-tidal reaches and large estuaries, while the Tenmile is dominated by several large freshwater lakes.

The area program emphasizes citizen involvement with efforts to protect and enhance salmon, steelhead, and trout.

Early in the development of STEP, education and outreach became a significant part of the local program, as it was recognized that educating the public and particularly area youth would be important toward achieving the long-term goals of STEP in general. Education through involvement increases awareness about the needs of native fish through habitat recovery and protection efforts. In addition to outreach activities, habitat restoration has been an important part of STEP with the initial habitat projects having taken place even before the program was formally established. Large numbers of volunteers also continue to be involved in the area's extensive fish culture program that includes broodstock development, spawning, egg incubation, rearing, and acclimation projects.

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

The Lower Rogue STEP is part of the Rogue Watershed District. The Lower Rogue Watershed District includes coastal basins from Four Mile Creek south to the California boarder. New River, Elk and Sixes Rivers, Euchre Creek, Rogue River upstream to Mule Creek, Hunter Creek, Pistol River, Chetco River, Winchuck River and other miscellaneous coastal tributaries are included in this district.

The focus of the STEP program within the district is to utilize volunteer resources to accomplish management objectives. The STEP Biologist works primarily with local clubs, landowners, timber companies, watershed councils, educators and school groups. The majority of volunteers that engage in STEP program activities in this watershed district belong to one of three local STEP groups: the Oregon South Coast Fishermen (OSCF), the Curry Anadromous Fishermen (CAF) and the Brookings Chapter of Northwest Steelheaders (BNWST). The STEP groups consist primarily of retired individuals interested in performing meaningful work that will help restore and maintain fish populations within local watersheds. Aquaculture is a primary focus for the Curry Anadromous Fishermen, with activities centered on operations at Indian Creek Hatchery. The Oregon South Coast Fishermen activities focus on population monitoring, broodstock collection and habitat restoration. All groups consider fishery education a high priority and often cooperate with other local entities to accomplish common objectives.

The Brookings Northwest Steelheaders (BNWST) formed early in 2008, has assisted with a handful of ongoing STEP activities. With the expansion of STEP interest, the district is developing new projects to recruit involvement of the group. Currently, BNWST have organized a scale sampling project on the Chetco River and assisted with smolt trapping, smolt releases and stream enrichment. The Lower Rogue Watershed District looks forward to working on projects with this group.

Throughout the next year the Rogue Watershed will be developing a conservation plan for fall Chinook salmon in the Rogue Species Management Unit. A public advisory committee will be assembled to provide input through the process. The three district STEP groups will have a member on the advisory committee.

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

The Upper Rogue STEP district extends from Mule Creek near river mile 48 of the Rogue River upstream for about 200 miles to where the river begins as a spring near Crater Lake. Approximately 400,000 people live in the district, providing a large number of schools, service clubs, sportsman clubs, and volunteers to assist in various STEP projects that educate citizens and improve fish habitat throughout the basin. Some examples of these projects include identification of small, fish bearing streams in the district that provide important juvenile salmonid habitat; fish salvage efforts to relocate juvenile salmonids in streams that dry out quickly due to hot weather, and various types of survey work.

Area fisheries include salmon, steelhead, trout, and warmwater fish. The Rogue River has one of the strongest runs of salmon and steelhead among all the coastal streams in Oregon. The coho salmon is the only fish in the district listed (as threatened) under the Federal ESA.

High Desert and Northeast Regions

Eastern Oregon STEP .....*Jennifer Luke, STEP Biologist*

The Eastern Oregon STEP program is administered by the ODFW High Desert and Northeast regions. These regions together cover the entire state east of the Cascades. This area includes the following major watersheds: Deschutes, Klamath, Malheur, Malheur Lake, John Day, Umatilla, Grande Ronde and Owyhee.

The STEP Biologist and local volunteers work with ODFW districts and hatcheries to identify specific projects requiring volunteer recruitment, supervision, or training. Project definition and direction come from the individual fish management districts and are based on the annual needs. The STEP program focuses its efforts on monitoring trout populations, conducting aquatic education programs and restoring fish habitat. Volunteers assist with a variety of surveys including electro-fishing, trap netting, redd and snorkel surveys. ODFW fish biologists utilize information gathered from these surveys to evaluate, monitor fish species and meet fish management objectives

Activities involving schools, teacher education, and general public education about fish populations and their habitats are a high priority for the Eastern Oregon STEP district. STEP volunteers eagerly share their knowledge of both fishing and conservation and their involvement fosters the next generation of conscientious anglers and conservationists.

EDUCATION AND PROGRAM DEVELOPMENT

Introduction

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

- 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.

The STEP program employs a publicist to provide publicity for the statewide program and to produce issues of the joint STEP and ODFW Fish Restoration and Enhancement (R&E) Program publication *FishWorks*. *FishWorks* highlights STEP and R&E Program activities and provides information on upcoming events and the value of projects to fish management.

Following are summaries of development and education activities conducted in STEP districts during 2007-08 (Table 1). This narrative is not intended to be comprehensive, but instead highlights a few of the major activities in each area.

Lower Willamette STEP

Passport to Fishing – Free Fishing Weekend

The Passport to Fishing event was held for the 15th consecutive year at Bonneville Fish Hatchery. This annual event is conducted on the Saturday of Free Fishing Weekend and is the largest event of its kind in Oregon, with attendance in 2008 exceeding 650 youth, and 550 adults. At the event, participating youth are taught how to angle for, and take care of Oregon's fish resources. Passport to Fishing is sponsored by ODFW and jointly organized by the North Willamette Watershed District (NWWD) Volunteer Coordinator and STEP. The event is made possible with the help and support of more than 150 youth and adult volunteers from local sportsmen clubs, and over 50 ODFW employees. For several volunteers, this was their 15th year of helping at the event.

Youth Angling Enhancement Program

The fifth year of youth angling events in the district were conducted under the Youth Angling Enhancement Program (YAEP) and STEP. Four clinics were held in different areas of the district to encourage local access: St Louis Pond in Gervais, Trojan Pond in Rainier, Commonwealth Pond in Beaverton, and West Salish Pond in Fairview/Gresham.

By adjusting the event dates to match scheduled fish stockings, the district was able to purchase large and trophy-size trout for each event. As a result, attendance and catch remained strong in 2008. Volunteers from local chapters of the Association of Northwest Steelheaders (ANWST), ODFW Angler Education Instructors, other angling clubs, along with individual volunteers, assisted over 400 youth participate in these events.

Additional STEP Activities

The STEP classroom incubator program continues to be hugely successful, with over 190 classrooms participating in the raising and releasing of salmon and trout fry. It would not be possible to accommodate this growth without considerable help from ANWST volunteers and mentor-oriented experienced classroom teachers. Groups such as OSU Extension, 4-H, Reed College, OMSI, and the Oregon Zoo have assisted as the program expands.

Mid-Willamette STEP

Technical Assistance

The district works with eight watershed councils in a variety of roles including: providing general information; providing technical expertise to habitat and inventory projects; assisting with volunteer training; and assisting with the development of action plans and restoration priorities. The STEP Biologist provides technical assistance to many agencies and organizations on fish related matters including the Sodom Dam fish passage project, road related repair or culvert replacements in Linn, Lane, Polk and Benton Counties, Division of State Lands (DSL) regulatory actions, and habitat restoration projects through out the district. The STEP Biologist is a member of the Oregon Watershed Enhancement Board (OWEB) Region 3 Technical Review Team, the Benton County Fish Passage Task Force, the Luckiamute River Fish Passage Task Force, the Newton Creek Management Area Tech Team, and the Long Tom, Calapooia, and Luckiamute Watershed Council's Tech Teams.

Youth Education

Many school districts in the Mid-Willamette district send students to Outdoor Schools and this has provided the STEP Biologist with additional educational opportunities for the program. The STEP Biologist participated in Outdoor Schools, summer camp fishing clinics, youth angling events, a youth water safety class through the Boy and Girls Club of Corvallis, Willamette Water Festival for Salem area youth, Salmon Watches, as well as Kid's Day for Conservation in which 2,000 local school children and their parents attended.

The STEP Biologist, along with volunteers from the Albany Chapter of the Northwest Steelheaders, ODFW Angler Education Instructors, and the Senior Fishing Buddies, hosted fishing stations at outdoor schools and summer camps organized by the Boy Scouts, Polk County Soil and Water Conservation District, OSU Extension Service (4-H), Ducks Unlimited, the Boys and Girls Club, and Adair Village Summer Program. In addition to catching stocked trout and sunfishes, students learned catch and release techniques and fish biology. One of the most

popular activities at outdoor school is fish dissection. The students share a juvenile steelhead or salmon to dissect and learn the internal and external anatomy and physiology of the fish.

Upper Willamette STEP

Technical Assistance

The STEP Biologist is part of the Coast Fork Willamette Watershed Council's Technical Committee tasked with providing technical expertise for projects sponsored by the council. STEP has assisted the council to obtain funding for and implement many projects in the watershed.

The STEP Biologist also participates in the Cedar Creek Planning Group, which was formed to bring resource agencies and landowners together to address water quality issues in the creek. The group would like the assistance of the STEP program to enhance the creek's in-channel and riparian habitats and to maintain water quality levels that will allow for salmon and trout to utilize the creek throughout the year.

Student Internship

The STEP Biologist coordinated a week long Student Internship from a private high school in Eugene. The student participated in a variety of activities, including fish sampling and habitat enhancement projects.

Youth Education

STEP staff and volunteers assisted with Youth Angling Enhancement Program events located in Cottage Grove, Creswell and Eugene. These events provided kids with the chance to check out a fishing rod, obtain instructions on casting and to catch one of the many trout that were stocked in each of the locations. The District considered each of the three events a success based on the percentage of kids that caught fish.

STEP participated in the Oregon Trout Salmon Watch program by serving on the Eugene area steering committee and taking part in one field trip involving more than 60 students from area schools. Students learned fish biology, water quality, riparian habitats and macro-invertebrate sampling during each one day event.

Program Outreach

STEP partnered with the United States Forest Service (USFS) and several local angling groups to host the Fish N' Fun exhibit at the Lane County Fair held in Eugene. Visitors to the exhibit had the opportunity to learn how to cast a fly or spinning rod with the assistance of Angler Education Instructors and other volunteers. Information presented at the fair included materials on fish species found in the area, habitat restoration, fishing techniques and local fishing areas. The booth had two 100-gallon aquariums set up with coldwater and warmwater fish. The fair also

included an interactive stream simulator table which allowed for kids to increase their awareness of watershed function.

STEP gave a presentation to the "Friends of Mosby Creek" group which was developed to bring landowners in the Mosby Creek area together to accomplish a variety of small restoration activities. Over 45 landowners and interested community members attended the presentation sponsored by the Coast Fork Willamette Watershed Council.

STEP staff, along with the Coast Fork Willamette Watershed Council, oversaw a public tour of riparian restoration efforts conducted by STEP and the Council. Over 25 community members attended the tour of Garden Lake Park in Creswell.

STEP attended the New Watershed Council Annual Workshop in Eugene. Staff led discussions with over 25 watershed council coordinators and resource agency staff on how STEP works with our local watershed councils.

STEP staff participated in a Fly-Fishing Festival in Eugene. Educational materials and displays were presented during the event. Staff also was present to answer various questions and listen to concerns from the public attending the event.

North Coast STEP

Education and Outreach

Education and outreach remain a focal point for the North Coast STEP program. Twenty-seven presentations and fieldtrips involving over 2,000 students and adults occurred. An additional six youth fishing events exposed over 600 youngsters to the joy of fishing.

North Coast Staff continued to participate in the Oregon Trout sponsored Salmon Watch Program, conducting 11 fieldtrips, educating elementary through high school students on the biology and life history of salmon. Presentations to over 600 other students also occurred at Children's Clean Water Festival, Down by the Riverside and through school fieldtrips and classroom visits.

Other outreach and educational activities that occurred this year included exhibits at the Cannon Beach Earth Day Celebration, Tillamook County Fair, the City of Vernonia's annual Salmon Fest and presentations to the North Coast Chapter of the Association of Northwest Steelheaders. Participation in Career Day for local high schools also occurred.

Fish Eggs-to-Fry Program

The North Coast STEP Fish Eggs-to-Fry classroom incubator program this year involved delivering eggs and presentations to students in 12 schools, elementary through high school, who participated in the hatching and releasing of spring Chinook salmon, fall Chinook salmon, winter steelhead and summer steelhead fry into approved streams. In addition, Warrenton and Astoria High Schools continued to operate full hatchery programs, rearing fall Chinook salmon, coho

salmon, and winter steelhead until the end of the school year when they were released as presmolts. Warrenton High School students worked with NOAA Fisheries–National Marine Fisheries Services staff to pit tag 300 fall Chinook salmon and 200 coho salmon to be tracked once released. Information will be collected on the movements and mortality of these fish, particularly avian predation.

Invasive Species Education

The North Coast STEP biologist worked with the Bureau of Land Management, OSU Extension staff, the Tillamook Estuaries Partnership and others to develop educational signs on invasive species impacts, their spread and prevention. The signs will be placed at existing access sites and kiosks being built by the three local high schools. Tillamook High School students are also developing a plan to monitor local waters for New Zealand Mudsnails which have recently been discovered in local waters.

Youth Angling

Youth Angling Enhancement Program events were held at 6 sites and involved over 600 youngsters and their parents. Youth fishing events occurred in conjunction with Camp UKANDU (a week long camp for kids with cancer) and Camp Rosenbaum (a week long leadership camp for at risk youth) with the help of STEP volunteers.

Mid-Coast STEP

Fish Eggs-to-Fry Program

The Mid-Coast STEP biologists continued with the ever popular classroom incubator program this year, providing eggs from local stock winter steelhead to students in 15 schools, elementary through high school. As part of this program the STEP biologists gave presentations on steelhead life cycles and the importance of functioning watersheds to steelhead and salmon survival.

Education

Educating children in the outdoors is a growing component of the Mid-Coast STEP program. STEP biologists conducted 29 field trips in association with schools, OSU Extension Service, United States Forest Service (USFS), local watershed councils and others.

Participating students and adults gained experience with numerous field exercises in stream ecology such as mapping stream habitat, sampling and identifying macroinvertebrates, sampling and identifying fish, learning fish anatomy and basic biology through dissections, and learning the importance of riparian vegetation.

Youth Angling

Youth angling events were held at three sites, Big Creek Reservoir, Eckman Lake, and Cleawox Lake, and involved over 1,000 youngsters and their parents. STEP biologists also supported the great work done by volunteer instructors for the Youth Angling Education Program by assisting with classes such as fish ecology, angler ethics and habitat restoration.

Umpqua STEP

Eastwood Elementary Outdoor Days

The STEP biologist worked with partners in the Eastwood Regional Education Committee to further enhance the Eastwood Elementary Outdoor Days. This program focuses on water cycles, food webs, macroinvertebrates, Native American culture, and fish life-cycles. The curriculum for each topic was also summarized in a 4th grade level passport that had puzzles, word searches, fill-in the blanks or drawings to further explain the topic. Each child attending the field event received a passport and a string for a necklace. At the conclusion of each 40-minute time frame, the child's passport was stamped and they received a bead for their necklace before moving to the next station. The event reached 500 kids from 6 different schools in the course of 5 days.

Angler Education

Angler education programs took place at Bowman's Pond and the Roseburg YMCA. These programs focused on knot tying, identifying various game and non-game fish, and how to use different types of fishing gear.

Umpqua Fishermen's Association

Last years efforts to revise the Umpqua Fishermen's Association (UFA) propagation proposal were met with positive reactions. The ODFW Commission voted to accept revisions, therefore increasing the Umpqua Fishermen Association's presmolt fall Chinook salmon program from 100,000 fish to 300,000.

Lookingglass Acclimation Site and Boat Ramp Project

This project when completed will add a new boat ramp on the South Umpqua River, increasing angler access to productive winter steelhead and smallmouth bass portions of the river. The acclimation site will provide another location to acclimate winter steelhead and should produce high numbers of anglers in the immediate area. Lastly, this site will provide an area to educate nearby high school students about fish hatchery management and biology.

Tenmile, Coos, and Coquille STEP

Millicoma Interpretive Center

The Millicoma Interpretive Center continues to be a popular place for student groups and others to come and learn more about the life histories of salmon and steelhead. This past year the facility received its largest number of visitors since the facility began. Over 3,800 visitors came to participate in the programs at the site. Visiting student groups and the general public get a unique "hands-on" learning experience. Groups are involved with the collection of broodstock, spawning, eggs and fry care, and fin-marking. Most of the student groups get an opportunity to incubate eggs in their classroom aquaria. This forges a great connection between their activities at Millicoma and the life-cycle of salmon.

Youth Angling

Oregon Department of Fish and Wildlife hatcheries provided 1,500 legal rainbow trout for stocking in the vacant steelhead acclimation pond at Millicoma Interpretive Center. This was a huge success with hundreds of children participating in the catching of these trout. Many children caught their very first fish at the Center.

A separate event that was held at Empire Lake in the City of Coos Bay as part of the annual Child Advocacy Center's Family Fun Day. The total number of children that participated in this event was 450. Department staff and volunteers were on hand to assist with fishing gear and angling instruction. A free lunch was provided to all of the participants by Northwest Natural Gas.

On Eel Lake, the STEP biologist and volunteers held a fishing clinic on Free Fishing Weekend for the ninth straight year. This event features a course that children can learn everything from knot tying to fish identification. Once the children complete the course they are allowed to fish in the net pen. The trout are fed by the volunteers for approximately three months prior to the event. STEP volunteers rear 1,000 trout from a local hatchery in a net pen in Eel Lake specifically for the clinic.

Other angling educational projects began this year. The STEP biologist facilitated the stocking of legal rainbow trout into portable fire suppression ponds for children to catch as part of four events. The first event was part of the North Bend Jubilee, and a trout pond was placed in the Pony Village Mall. This pond was a huge success. The STEP biologist directed the efforts of adult volunteers and youths with the Upward Bound program to help children catch and take care of the trout. Similar trout ponds were set up at the Mill Casino in North Bend as part of a prostrate cancer awareness event. Mingus Park in Coos Bay was the location of the third trout fishing ponds that were part of the city's annual Fourth of July Celebration. The last trout ponds were set up as part of the Charleston Seafood Festival. Fishing poles and gear were provided to the children at these events. These ponds were a great opportunity for children to catch fish. Local fire departments from North Bend, Coos Bay, Charleston, and the Coos Forest Protection District were instrumental in the set up of these ponds.

Coquille High School Educational Hatchery

Volunteers and students continued to work on the Coquille High School Educational Hatchery during the year. New informational and educational displays were installed at the site. During the winter, the high school students continue to be teachers themselves in what is now known to be "Tour Tuesday." Elementary school classes devote an afternoon learning salmon life histories and their struggle to survive. The high school students spawn and incubate salmon and steelhead eggs at the station which provides a wonderful "hands on" experience for the young students. This is a wonderful time to see the high school students impart resource awareness and education to these younger students. For the adult volunteers and teachers, it is a time to sit back and enjoy.

At Coquille High School this past spring, for the second year in a row, hundreds of students were involved with the marking of the fall Chinook juveniles that are spawned and raised at the facility. This was a great "hands on" opportunity for students to take part in marking these fish so that they could be better monitored as they migrate to the ocean and back again to the facility. Many students said that marking the fish was the highlight of their entire school year.

Morgan Creek Hatchery

The reconstruction of the educational and fish cultural facilities continued at Morgan Creek. Many of these activities were funded by the ODFW Restoration and Enhancement Program. This training facility, when completed, will be a valuable educational component. Construction of a new raceway, fishway, and diversion dam began in July of 2007. Volunteers and youths with the Upward Bound program continued with the construction of fish facilities throughout the summer of 2008. Volunteers will devote over 25,000 hours to complete the Morgan Creek facilities over the course of the next four years. Volunteer time on this project alone is estimated to be valued at $500,000. The total project cost is estimated to be in excess of $1.2 million.

Fish Eggs-to-Fry Program

The educational opportunity that the classroom aquaria provide to schools has been increasing in recent years. This past year over 1,500 students at five schools got to personally have their very own live salmon egg at their desk. This involves each student in the fish. The premise of giving each student their own egg is so they can name each fish. This connects the children to their eggs and to the resource as a whole. Once the eggs are named, the students carefully place the eggs in school aquaria where they hatch and develop. At the time the eggs are handed out, the students are presented with a lesson by the STEP Biologist on the biology of salmon eggs and salmon in general.

Lower Rogue STEP

Program Outreach

News releases were written for local newspapers, radio and TV stations. The objective was to recruit volunteer involvement, inform the public of project results and give volunteers recognition for their accomplishments.

Presentations were made at organized fisherman group meetings. Primary topics discussed were fish management policy, habitat problems and solutions, angling regulations, STEP guidelines, district management objectives and volunteer recruitment.

Presentations were made to local students from local schools. Topics included: salmonid life history, fish anatomy, fish culture, habitat protection and restoration. Some of the presentations involved a fieldtrip relative to the topics discussed.

Miscellaneous presentations, classes and news releases were produced by the local STEP groups. These outlets were used to recruit volunteers, fundraise, educate and inform the public of STEP activities.

Oregon South Coast Fishermen Donate Rods and Reels

Brookings third-grade teachers expressed interest in incorporating an angling outing into the Fish Eggs-to-Fry program conducted at the Kalmiopsis Grade School. The Oregon South Coast Fishermen donated 30 new rods and reels in support of the outing. The outing is scheduled for the 2009 school year and will be held at the Arizona Beach State Park pond. Trout will be stocked prior to the event. In addition, educational stations are planned for fish cleaning, casting and angling techniques.

Azalea Festival

The Oregon South Coast Fishermen (OSCF) conducted their annual fishing ponds at the Brookings Azalea Festival. OSCF has hosted the event since 1989. The event is held for children 13 years of age and under. Approximately 250 youth participated in the event this year. Every year, the OSCF give away fishing poles to early anglers that attend the event. This year 110 rod and reel combos were handed out to the young anglers. The event also includes displays of ongoing STEP projects and a fundraising raffle. This project creates a great atmosphere to recruit new volunteers into the STEP program.

Free Fishing Day

On June 12th, the free fishing day event took place at Libby Pond. Over sixty kids registered for the event organized by the Oregon Department of Fish and Wildlife and the United States Forest Service. Curry Anadromous Fisherman (CAF) volunteers sponsor the annual fishing derby, and were on hand to register the children ages 2 through 13.

The volunteers assisted kids with fishing tips, instruction, registration and measurement of trout. CAF provided free hotdogs and drinks for the event. Sixty-three participants caught over 250 rainbow trout during the derby. In addition, OSCF, CAF and local businesses donated money to purchase fishing rods and equipment to be given away in a raffle.

Salmonid/Bait Fish Poster

In an effort to educate the public in fish identification, the OSCF developed and maintained posters in the Port of Brookings to help fishermen differentiate salmonids from bait fish. In past years, volunteers with OSCF noticed salmonid juveniles being harvested as baitfish. Volunteers posted fish identification posters at popular angling spots and have observed that anglers are now using the posters for fish identification. The STEP group plans to annually upgrade and maintain the posters for display.

Curry County Fair

The Curry Anadromous Fishermen and the Oregon South Coast Fishermen teamed up to sponsor and operate a booth at the Curry County Fair in Gold Beach. ODFW provided a large aquarium stocked with Rogue Chinook salmon, steelhead and juvenile green sturgeon as part of the display. Both groups provided displays of their activities.

In addition, posters were developed for display that discussed non-native northern pike minnow and their effect on native species. The exhibit helped make the public aware of the activities of both STEP groups and provided a venue for interaction between the South Coast STEP groups.

Upper Rogue STEP

Public Outreach

Outreach and education are primary functions of the Upper Rogue STEP position. Stories in newspapers, on radio stations, in news releases, and television interviews provided information to the public on upcoming events and progress on existing studies. Reported results of volunteer projects increased public interest in small streams, urban streams, intermittent streams, and how to protect them and improve habitat. The small stream, urban stream, and the intermittent stream project was featured in a newspaper insert about ODFW. A similar article was written and published in the Oregon *FishWorks*, a newsletter from ODFW's Fish Restoration and Enhancement and Salmon and Trout Enhancement Programs.

Members of the upper Rogue staff participated in Salmon Watch field trips providing information on salmon and steelhead life histories to students of various ages during the fall of 2008. In addition, the STEP Biologist presented salmon and steelhead life history information to the students of Williams Elementary School.

Fish Eggs-to-Fry Program

The classroom incubator program remained popular this year. A total of 7,000 spring Chinook salmon eggs were delivered by volunteers to 23 schools in the Rogue Valley. The eggs were incubated in the classrooms from October 25 to mid-December. Surviving fry were released at either Touvelle or Riverside Park along the Rogue River depending on whether the eggs were incubated in Medford or Grants Pass.

Annual Free Fishing Day

Volunteers from Joe's Sporting Goods, the First Church of the Nazarene, the public, and ODFW assisted anglers at the annual Free Fishing Day Event held at Expo Pond on June 7, 2008. Other groups of volunteers in the district sponsored Free Fishing Day Events at Hyatt Lake, Lost Creek Lake, Medco Pond, and Butte Falls Hatchery in Jackson County, and Lake Selmac in Josephine County. Four other volunteers cleared brush at Expo Pond, and prepared and purchased fishing gear for the event at Expo Pond.

The STEP biologist and volunteers spent 22 hours preparing rods for the Youth Angling Enhancement Program (YAEP) event held at Reinhart Park Pond on Saturday, May 17, 2008. Another 10 volunteers and ODFW employees spent 60 hours assisting anglers at the event.

Eastern Oregon STEP

Kokanee Karnival

Kokanee Karnival continues to be a popular education program for Deschutes, Jefferson and Crook County elementary students. During 2007-2008, 380 students participated in the Kokanee Karnival Comprehensive Education Program. The Comprehensive program includes classroom activities as well as field trips to learn about salmonids and their habitat. Students and teachers also tour a hatchery and attend a spring fishing clinic.

Approximately 1,500 students participated in the Kokanee Karnival Electives Program in which teachers sign up for classroom activities such as raising trout, basic trout biology class and (or) angler education. Thirty-three classes participated in basic trout biology classes, twenty-one participated in Angler Education and forty-one classes participated in classroom trout incubation.

Kokanee Karnival receives exceptional support from both the volunteer community and our financial sponsors. Currently, the program is increasing its capacity to accommodate more Comprehensive and Elective Education Program classes. Partners include STEP, Central Oregon Flyfishers, ODFW Restoration and Enhancement Program, Sunriver Anglers, Wolftree Inc., Central Oregon Llama Association and the Deschutes National Forest. The Eastern Oregon STEP Biologist serves on the Kokanee Karnival Steering Committee, coordinates portions of the program and provides training, technical assistance and volunteer recruitment.

Outreach Events

Oregon Department of Fish and Wildlife STEP staff and volunteers participate in salmon-trout related outreach activities for students of all ages. The STEP Biologist presented information and conducted activities for events sponsored by the following groups: Oregon Trout's "Salmon Watch", High Desert Museum's "Make a Splash" Festival, High Desert Museum Teacher's Night and Prineville's Fish Festival. Over 1,500 students participated in these events.

Creeks and Kids Workshop for Teachers

The Eastern Oregon STEP biologist instructed at a week-long teacher workshop, "Creeks and Kids," coordinated by the Jackson Bottom Wetland Association. Teachers were taught stream related activities to enhance their school curriculum. Many of their activities are drawn from the STEP publication, The Stream Scene. The STEP biologist was responsible for field and classroom instruction of trout sampling methods and procedures, fish identification, basic trout biology and trout habitat. A total of twenty-eight teachers participated in this workshop.

INVENTORY AND MONITORING

Introduction

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

- Angler or creel surveys
- Fish passage or culvert inspections
- Fish population or distribution survey or monitoring
- Fish life history or other investigations
- Stream and other aquatic habitat surveys
- Miscellaneous monitoring activities (e.g., water quality monitoring)

To conduct these surveys, volunteers become skilled in sampling methods and learn a wide variety of fish or fishery sampling techniques, including adult and juvenile fish traps, electro-fishing gear, seines, gill nets, trap nets, snorkeling, hook and line, radio telemetry, and creel surveys.

The following is an overview of STEP fish population and stream habitat characterization activities conducted during 2007-2008 (Table 2). This narrative is not intended to be comprehensive, but instead reflects the range of STEP activities for each area.

Mid-Willamette STEP

During the 2007-2008 reporting period, STEP again led the district's small stream sampling effort with fish surveys and hoop traps. Most of these efforts involved students from local schools. Students from Hoover Elementary School and Corvallis High School maintained and tended traps at sites located on Dixon Creek. In the Salem, students from elementary, middle, and high schools assisted the STEP Biologist to sample local streams with seine nets. The primary intent of this program has been to document the presence of cutthroat trout in waters where little or no fish information exists and to get a sense of relative abundance. However, additional benefits from the program come from raised awareness for the "little brown fishes" in the area and educational opportunities for students. Information on fish presence has in-turn been used by cities, counties, watershed councils, and state and federal agencies to develop habitat restoration and protection plans as well as to identify individual project opportunities. The data gathered from traps on Dixon Creek and in Salem area streams will be used in the future to plan habitat restoration projects on the creek.

<u>Jane Goodall Environmental Middle School</u>

One of the Mid-Willamette STEP Biologist's most interesting and rewarding projects in 2007-2008 was working with students from the Jane Goodall Environmental Middle School. For their eighth grade class research project, students planned a project investigating fish species diversity in relation to stream habitat.

Students collected fish, other aquatic animals, and water quality measurements in three different reaches of Salem area streams to represent pristine, degraded, and restored habitat types. Data from the three reaches were compared to demonstrate the differences in aquatic species assemblages and water quality in the different habitats. Of special note, in the restored section of creek located in the Pringle Community in the heart of South East Salem, a coho salmon, large rainbow trout and trout fry were collected. The coho salmon demonstrates fish passage from the Willamette River and the trout fry shows there is spawning occurring in the reach. This information will be key to future Pringle Creek management decisions.

Upper Willamette STEP

Water Quality

STEP conducted a variety of Water Quality Monitoring projects in the district. Temperature probes were deployed in two streams to evaluate spring and summer temperatures. Fish presence data show that both streams are rearing areas for salmon and trout.

Fish Surveys

A variety of fish presence surveys in the district were conducted by STEP. These surveys document fish presence for timber harvest operations, culvert replacements and long-term monitoring.

Spring Chinook salmon and summer steelhead spawning ground surveys were also conducted in the Middle Fork and Coast Fork Willamette basins. Both streams that were surveyed are free of impassible dams and contain low numbers of spawning spring Chinook salmon and/or summer steelhead.

STEP staff and volunteers operated eight upstream migrant hoop traps to monitor migrating cutthroat trout. The projects collected valuable information on the life history and relative abundance of local cutthroat and other fish populations. This ongoing project is an important outreach/education tool as it provides volunteers with a good “hands on” experience working with fish in local streams.

STEP staff conducted snorkel surveys in a variety of water bodies to obtain population data on salmon and trout in the district. Snorkel surveys were conducted in the McKenzie, Middle Fork Willamette and Coast Fork Willamette River basins.

High Cascade Lakes Sampling

Volunteers assisted staff with collecting information on fish survival in the High Cascade Lakes. Volunteers hiked into designated lakes, sampled for fish presence with hook and line and recorded various physical and biological data. This project is very popular with the public and will continue to be conducted to provide needed information on fish survival in the High Cascade Lakes.

Gold Lake Trapping

Volunteers from the McKenzie Flyfishers assisted with an on-going project to trap and remove brook trout from Gold Lake in an effort to enhance the lake's rainbow trout fishery. Brook trout are numerous in Gold Lake and tend to become stunted; they are also responsible for decreasing the size and number of rainbow trout. This year approximately 1,400 brook trout were relocated to Charlton Lake in the Deschutes Basin which should allow for additional growth on the fish remaining in Gold Lake and provide a brook trout fishery in Charlton Lake.

North Coast STEP

Volunteers from Oregon Trout and the Steelheaders deployed water temperature data loggers in the Salmonberry River system to help characterize water temperature in summer months. These volunteers and Rainland Flycaster volunteers also conducted steelhead surveys in the Salmonberry River and associated streams. Volunteers also conducted surveys in other North Coast streams which will be used in monitoring habitat restoration projects.

Mid-Coast STEP

Mid-Coast STEP biologists coordinated and instructed volunteers in fish trap operations at Schooner Creek and Siletz Falls, including correct fish handling, species and gender identification, accurate data recording, and safety procedures. As a result of high water events volunteers conducted significant emergency maintenance on the traps throughout the season to keep them running. These trap operations are essential to district fisheries management and more than 1,500 hours were donated by over 30 volunteers in assisting with these fish monitoring activities.

Volunteers completed the 12th year of monitoring the Knowles Creek juvenile trap. Low flows made trapping at the site particularly difficult this year and may be responsible, at least in part, for the record low fish abundance at the site this year.

Umpqua STEP

The STEP biologist coordinated volunteers at the Calapooya Creek fish trap in an effort to capture approximately 600 coho salmon. Volunteers also monitored steelhead, coho salmon, and fall Chinook salmon at various trapping locations throughout the district.

Big Tom Folley Creek Field Trip

Approximately 40 students from the Phoenix School District participated in a week long field trip to Big Tom Folley Creek. During this experience the students participated in various stream habitat monitoring practices in order to track changes in stream attributes over time. Not only did the students gain great experience working in the field but this data will be insightful for future habitat restoration projects.

Temperature and Dissolved Oxygen Monitoring

Gardiner/Reedsport/Winchester Bay (GRWB) STEP volunteers also assisted the Partnerships for Umpqua Rivers (PUR) monitor 13 different lower Umpqua tributaries for temperature and dissolved oxygen throughout the summer. GRWB volunteers also snorkeled portions of Camp Creek to enumerate juvenile salmonid population levels. This data will be helpful in determining future habitat restoration projects in the area.

Creel Cards and Snout Collection

Voluntary creel cards and snout collection barrels were placed along the Umpqua River and in seven different locations along Winchester Bay. The information and biological data collected at these sites will provide insight for future fall Chinook salmon management decisions in the Umpqua.

Tenmile, Coos, and Coquille STEP

Habitat Surveys

Throughout the District, habitat for salmonids has been compromised by culverts that block passage for adult and juvenile fish. Volunteers have expended a considerable amount of time and effort to correct these passage problems. More work is needed in the form of habitat surveys that identify problem culverts and subsequent follow-up corrections.

Each stream within the three major basins has specific habitat limitations. Only detailed surveys can identify the problems so that they can be corrected.

Monitoring

The most important monitoring operation that volunteers are involved with each year is the fall Chinook salmon recruitment surveys that are conducted in the Coos and Coquille estuaries. In the Coos River basin volunteers release in excess of two-million Chinook salmon juveniles annually. With the large numbers of fish released, an evaluation of the impacts on wild Chinook salmon is needed. One way to measure the impacts is

to monitor the growth and abundance of Chinook salmon in the estuary. Research results have indicated that if the mean fork length of juvenile Chinook salmon at ocean entrance in the fall of the year is below 12 cm then the carrying capacity for the basin may be exceeded. This monitoring begins in the spring and continues through the fall of the year. Volunteers in the STEP program play a key role in this long-term monitoring project.

Lower Rogue STEP

Monitoring

Population monitoring consisted of volunteers implementing and operating two downstream migrant rotary screw traps and seining juvenile fall Chinook salmon. Volunteers also assisted with the 33rd year of the Huntley Seining Project.

Upper Rogue STEP

Surveys

Volunteers were recruited through STEP and trained to monitor and identify fish species captured in traps in the Rogue Watershed throughout the winter. To date ten streams have been sampled. Sixteen volunteers put in over 260 hours sampling hoop traps in 2007 - 2008 alone. This project has been a useful tool in finding out where fish go during high flow periods and has increased our knowledge of the distribution of threatened coho salmon.

The hoop traps used in this project have proven to be a useful tool to test whether or not fish are able to move above potential barriers. Coho salmon were found in 8 of the 10 streams sampled during winter flood periods. Juvenile rainbow (steelhead) trout were found in all 10 of the streams, cutthroat were found in 3 and juvenile Chinook salmon were part of the sample in 5 of the streams. If these streams do not dry up in the summer, water temperature gets too high for salmonids. It is interesting to note that salmonids return as soon as the waters cool in the fall.

Temperature Loggers

Temperature loggers were placed in ponds at the Crater Land Lab to determine how late in the spring temperatures stay low enough to raise juvenile trout. A temperature and dissolved oxygen probe was used by a volunteer to determine whether or not reservoirs had become too warm for stocking salmonids in the late spring.

Eastern Oregon STEP

North Fork Crooked River Canyon Sampling

High water levels provided suitable water conditions for trout sampling in the North Fork Crooked River Canyon in 2008. The STEP biologist recruited volunteers and coordinated a fish sampling work project. Volunteers spent two days sampling native redband trout in various sections of the North Fork Crooked River Canyon.

Little Lava Lake, Tui Chub Removal and Rainbow Trout Monitoring

The goal of this project is to reduce competition for food and space from an invasive and prolific tui chub population in Little Lava Lake. Little Lava Lake is considered the source of the Deschutes River and is located approximately 30 miles from Bend. Indigenous species include redband trout and mountain whitefish and 10,000 rainbow trout fingerlings are stocked annually. Brook trout also use the lake. During the chub spawning season, Sunriver Angler volunteers removed tui chub using two trap nets at either end of the lake. This was the third year of chub removal and an estimated 15% of the adult spawning population was removed in 2008.

Volunteers are monitoring zooplankton levels as well as collecting biological data on trout. Zooplankton levels should indicate whether chub forage has decreased. Eighteen volunteers took part in this labor intensive project and contributed 280 hours.

Spawning Surveys

The STEP biologist and other ODFW staff trained and supervised volunteers for ongoing, annual bull charr, brown trout and redband trout spawning surveys in various watersheds. Rivers surveyed were Upper Malheur and North Fork Malheur, Upper Deschutes, Metolius and Fall River. Volunteers were paired with local biologists and trained to identify and count redds. Eighteen volunteers donated over 225 hours to these surveys. Survey results are used by ODFW district staff and distributed to volunteers and angling clubs.

Crooked River Trout Population Survey

The STEP biologist coordinated and supervised volunteers who assisted with a drift boat electro-fishing population survey on Crooked River. Volunteers assisted biologists by releasing fish upstream, after sampling they also recorded biological data and informed downstream anglers about the sampling boat. The Crooked River supports an easy access, year round, wild trout fishery for anglers. The Crooked River trout population has declined in recent years and anglers want to be involved with monitoring one of their favorite local fishing spots.

Redband and Whitefish Study – Crooked River

STEP volunteers assisted an Oregon State University graduate student, Shivonne Nesbit, in tracking redband trout and whitefish in the Crooked River. In recent years, redband trout populations have dramatically declined as the whitefish population increased. This study will show movement patterns of redband and whitefish in the Crooked River. The STEP biologist trained volunteers to use radio tracking equipment, GPS and data collection. The STEP program also provided use of a GPS and vehicle for volunteer use. Furthermore, high nitrogen saturation may be contributing to redband mortality and volunteers are monitoring water quality to test this hypothesis. Volunteers contributed 350 hours to help track fish and collect water quality data.

HABITAT IMPROVEMENT

Introduction

Each year, volunteers conduct or assist with numerous 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
- Aesthetic qualities through the Keep Oregon's Rivers Clean program

Although the stream nutrient enrichment program is not strictly a STEP activity, many carcass placement projects rely heavily on the manual labor of STEP volunteers, as access to sites can be poor and carcasses must be placed in a manner that simulates natural distribution and conditions. Carcass placement occurs in streams where populations of spawning anadromous salmonids are well below historic levels.

The Keep Oregon's Rivers Clean (KORC) program created to collect and recycle discarded angling line and tackle continued in 2007-08. Currently, approximately 100 stations have been installed and are being maintained by volunteers within the fish districts.

The following is a summary of habitat improvement projects conducted during 2007-08 (Table 3). This narrative is not intended to be comprehensive, but instead highlights a few of the major activities in each area.

Lower Willamette STEP

Stream Nutrient Enrichment Program

The thirteenth year of the district's stream nutrient enrichment program was completed with cooperation from the Clackamas Hatchery, Sandy River Hatchery, the United States Forest Service, and the USFWS Eagle Creek Hatchery. The carcasses are intended to mimic historic run densities of spawning coho salmon in area streams and increase stream nutrient levels for aquatic organisms.

Approximately 10,000 coho and Chinook salmon carcasses were placed in the upper Sandy River Basin, the upper Clackamas River Basin, the Molalla River Basin, the Upper Tualatin Basin, and the Yamhill Basin. Volunteers from the Association of Northwest Steelheaders (ANWST), students from various

local schools, SOLV, members of the Sandy River Watershed Council and Clackamas River Watershed Council, the Molalla Native Fish Society, as well as the Confederated Tribes of the Grande Ronde, and the Rainland Flycasters assisted with the carcass distribution effort.

Line and Tackle Collection

As part of the KORC program four line and tackle collection stations were in their fourth year of use on the Sandy River. STEP and volunteer members of the Sandy Chapter of the Northwest Steelheaders maintained the stations. Stations in their second or third year of use can also be found on the Clackamas River, Blue Lake Park, Herman Creek, and Salish Ponds.

Mid-Willamette STEP

Partnerships and Technical Assistance

As much of the land in the Mid-Willamette basin is privately owned, restoration efforts rely heavily on the cooperative participation of private landowners. In addition to efforts with other state, local and federal agencies, STEP works closely with watershed councils, industry, individuals and the more traditional landowner assistance agencies (Soil and Water Conservation Districts, Natural Resources Conservation Service, U.S. Fish and Wildlife Service) to conduct stream nutrient enrichment, instream and riparian habitat, and fish passage restoration projects.

The STEP Biologist provided technical advice to the Calapooia Watershed Council on the fish passage problems at the Sodom Dam, and assisted Linn County and Benton County Roads Departments, and the Long Tom, Calapooia, Luckiamute, and Marys River Watershed Councils with fish relocation associated with culvert or other fish barrier replacements. In addition, the STEP Biologist assisted the Luckiamute Watershed Council (LWC) with the removal of a significant fish barrier at the mouth of Ritner Creek near Kings Valley.

Carcass Placement

The placement of salmon and steelhead carcasses into area streams for nutrient enrichment is accomplished only through the efforts of volunteers and has, surprisingly, become one of the more popular STEP activities. This past year, salmon and steelhead carcasses that were used as brood for programs at Marion Forks and South Santiam Fish Hatchery were again placed in the Santiam and Calapooia basins. To replicate historic abundance and distribution, fish are placed in five different rivers, creeks and streams in the district. Volunteers from the Albany Chapter of the Northwest Steelheaders and the Santiam Flycasters contributed many hours toward carcass enrichment efforts in the Mid-Willamette district.

Upper Willamette STEP

Carcass Placement

STEP staff worked with volunteers from the Northwest Steelheaders, Coastal Conservation Association and the United States Forest Service to distribute spring Chinook salmon carcasses

in the McKenzie, Middle Fork Willamette and Coast Fork Willamette basins. Over 1,800 adult salmon carcasses were placed in five different rivers in the watershed.

Riparian Restoration

STEP along with the Coast Fork Willamette Watershed Council worked together to obtain a $95,000 grant to restore a section of creek and adjacent backwater habitat at Garden Lake Park in Creswell. Invasive plant species are being removed and replaced with native plant species along the banks of Garden Lake and Hill Creek, a tributary to the Coast Fork Willamette.

North Coast STEP

Stream Nutrient Enrichment

Dozens of volunteers and students participated in North Coast Stream Enrichment activities, placing over 70,000 pounds of salmon and steelhead carcasses in streams and rivers from the Little Nestucca to the lower Columbia River tributaries, to benefit salmonids and other species.

Habitat Restoration

Volunteers from the Rainland Flycasters improved fish passage by removing debris plugging the fish ladder at Barth Falls on the North Fork Klaskanine River. The log jam had been deposited by high winter flows, making the fish ladder impassable.

Riparian Restoration

Riparian restoration work continued at two ODFW fishing access sites on the North Coast with help from the Tualatin Valley Chapter of the Association of Northwest Steelheaders, the Rainland Flycasters, and Seaside High School. Invasive species were removed from existing plantings on the Wilson and Necanicum Rivers and additional native trees planted and protected along the Necanicum.

Mid-Coast STEP

Habitat Restoration

Local volunteers helped to develop an instream habitat restoration project along three-miles of the mainstem Big Elk River (Yaquina Basin) to benefit fall Chinook salmon. The biologist coordinated with local landowners and a volunteer group that are involved in other STEP projects in the Yaquina Basin. Volunteers raised money to contribute as ‘match’ funding for the project and assisted in the implementation of the project by flagging large wood storage areas

prior to implementation, monitoring roads and holding traffic for safety during helicopter placement of wood, and removing flagging from the stream after implementation.

As in previous years, a Boy Scout troop from Veneta continued to place recycled Christmas trees into Whittaker Creek.

Umpqua STEP

Carcass Placement

Gardiner-Reedsport-Winchester Bay (GRWB) STEP continued its participation in the nutrient enrichment program by placing Chinook salmon carcasses in the North Fork of the Smith River.

Habitat Restoration

One instream habitat project was implemented by the STEP Biologist. Approximately one mile of stream was enhanced by the addition of large woody debris in an effort to enhance fish habitat.

Several plans have been discussed for more restoration projects to take place in the lower Umpqua with the assistance of GRWB volunteers and Partnerships for Umpqua Rivers (PUR) working together into the future.

Tenmile, Coos, and Coquille STEP

Habitat Restoration

Habitat restoration projects are an important component of the volunteer projects in the district. The largest habitat improvement project conducted by volunteers was the continued restoration of a project site at the new fish facilities at Morgan Creek. Thirty students from Millicoma Intermediate School devoted an entire day to planting hundreds of willows and trees along Morgan Creek and in a newly restored wetland. Students from Marshfield High School's "Destinations" devoted days to a riparian conversion project. These students cut blackberries to prepare areas for the planting of more valuable riparian plants. Forty students from North Bend High School and volunteers planted the willows along Morgan Creek to restore the riparian habitat that had been compromised through decades of unrestricted grazing by livestock. The volunteers also planted grass and placed straw for mulch over ground that was disturbed by the blackberry removal project. The students from North Bend participated in the project as part of their annual community service project.

In the summer of 2008, a heavy equipment contractor devoted days to the construction of a large wetland pond in the restored wetland area along Morgan Creek. The pond was designed to increase the wetland values of this area by increasing the diversity of plants and animals that use the area. The donation of the contractor services is valued at over $5,000.

Carcass Placement

Agency staff and volunteers processed and placed 3,281 salmonid carcasses into 11 different streams. Most of these carcasses were fish returning to Coos Basin STEP facilities. Many of these carcasses were placed into streams as part of an ongoing experiment to address the long-term impacts of these nutrients on salmon and steelhead populations. The benefits of these marine derived nutrients are not limited to the stream ecosystem.

Upper Rogue STEP

Removal of Lazy Creek Dam

Information from a small, urban, and intermittent stream project led to the removal of Lazy Creek Dam, a six-foot tall dam that blocked fish movements upstream from the mouth of Lazy Creek. Removal of the dam and a nearby concrete culvert will improve access to one-mile of unused rearing habitat in Lazy Creek.

Habitat Restoration

Existing irrigation ditch structures on small, urban, and intermittent streams are also blocking salmonids from using 2.5 miles of Sand Creek near Grants Pass. The Middle Rogue Watershed has planted miles of riparian habitat upstream from the blockage points on these creeks. The small, urban, and intermittent stream project has located the structures that are blocking fish movements.

Keep Oregon's Rivers Clean Program

Volunteers collected over 128 pounds of monofilament in the four years since the Monofilament Recycling Program started in 2004. Not only does the project improve the looks of the riparian habitat, it saves birds and small wildlife from becoming entangled. This year's total, 15 pounds is similar to the last two-years. Previous year's weights of monofilament recycled ranged from 13 to 46 pounds. Volunteers put in 63 hours collecting monofilament and drove 1,000 miles to and from the recycling stations.

Fish Passage

Fish passage checks were performed in the early fall and after each major freshet by ODFW personnel and volunteers at about 30 culverts and fish passage structures in Josephine and Jackson Counties. Two structures, the fish ladder where Central crosses Gilbert Creek in Grants Pass and the fish ladder at Murphy Dam on the Applegate River become plugged at least twice a year.

Stream Nutrient Enrichment

Over 6,920 pounds of coho salmon carcasses provided food and nutrition for macroinvertebrates, riparian vegetation, and juvenile salmonids in Elk Creek, Bitterlick Creek, and Taylor Creek in the spring of 2008. Coho salmon carcasses totaling 2,240 pounds were placed in Taylor Creek by 16 volunteers from the Middle Rogue Watershed Council, the Middle Rogue Steelhead Chapter of Trout Unlimited, Southern Oregon Fly Fishers, the US Forest Service, and ODFW. Eleven volunteers from the Upper Rogue Watershed Council added 3,000 pounds of coho salmon carcasses to Elk Creek and 1,500 pounds to Bitterlick Creek.

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 releasing juvenile fish. STEP volunteers often work in conjunction with ODFW fish hatcheries at one or more 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 facilities that perform the entire rearing cycle from broodstock collection to release. In both cases, STEP propagation efforts are guided by ODFW management objectives, and are consistent with the guidelines, practices, and protocols outlined by hatchery management policy.

Because STEP fish culture projects are an integral part of ODFW fish management programs, oversight of STEP propagation activities 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 the projects will meet fish management objectives and are consistent with policies regarding potential impact to native fish populations. Specific legal limitations regarding STEP also exist that, in addition to ensuring 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 to 5 year cycles depending on the type of project and fish species involved. Once the cycle is complete, the project must be reviewed through a formal renewal process. In addition, STEP propagation projects that rear and release more than 100,000 fish must receive authorization from the Oregon Fish and Wildlife Commission. Presentation of the project at a Commission meeting also serves as an opportunity for public comment. Public comment during the propagation project review process can also be submitted directly to staff or can be provided when the project is presented for review by STAC at a regularly scheduled STAC meeting. If public interest warrants, the Department may choose to hold additional public meetings to present and discuss projects under review.

The importance of STEP fish culture efforts to Oregon’s fish resources do grant program activities some legal protections such as not having to obtain water rights to operate a facility as a STEP project is defined as “beneficial use” of the state’s waters. The STEP biologists work closely with volunteers to ensure a 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 assistance. 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 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 be greatly diminished in many areas.

Many projects have more than a single purpose and often 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, also known as the "Fish Eggs to Fry" program.*
- Stream hatchbox projects that release unfed fry.
- Fish rearing projects. All activities included here involve feeding and caring for fish.
- 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 a summary of STEP fish culture projects from the STEP areas (Table 4). This narrative is not intended to be comprehensive, but instead highlights a few of the major activities in each area.

Lower Willamette STEP

Fish Eggs-to-Fry Program

Over 190 school classroom projects incubated and released more than 100,000 unfed salmon and trout fry into 12 lakes, ponds, and streams in the Portland Metro Area. Many of these projects are sponsored by local chapters of the Association of Northwest Steelheaders (ANWST), the OSU Extension Service, Reed College, and other local organizations.

This extensive commitment to the schools includes the purchase of the incubation equipment, delivery of fish eggs to the classroom, and support services to each of the participating schools. Although this project is intended to be educational in nature, it also falls under the fish culture classification.

Fish Acclimation Projects

The district has for many years used net pens to acclimate juvenile salmon and steelhead to enhance the popular sport fishery in the Willamette and Clackamas Rivers. Although the number of net pens has been reduced during the last several years, the project located near the confluence of the Clackamas and Willamette River at Clackamette Cove again acclimated and released 80,000 spring Chinook salmon smolts in 2008. An additional 160,000 salmon smolts were directly released into Clackamette Cove without acclimation in 2008.

Volunteers from the McLaughlin Chapter ANWST work with ODFW staff to assemble the net pens and maintain them, feed and release the acclimated fish, and then disassemble the net pens for storage. This is a very labor-oriented, volunteer driven project.

A second STEP fish acclimation site is Cassidy Pond, a private pond owned by Larry and Naomi Cassidy adjacent to the Lower Clackamas River. With the help of the Cassidy family, nearly

25,000 winter steelhead smolts and 50,000 spring Chinook salmon smolts were acclimated and released into the Clackamas River in the spring of 2008. The Cassidy's helped place the fish into the pond, monitor, maintain, and feed them, then release the smolts at the end of the acclimation period. Much like the STEP net pens at Clackamette Cove, the Cassidy acclimation project contributes to the Department's larger Clackamas River spring Chinook salmon and steelhead hatchery program.

Spring of 2008 marked the second year of acclimation at our facility on Foster Creek, a tributary of the Clackamas River. The site is located on property owned by Ris and Janet Bradshaw and construction was funded through the ODFW Fish Restoration and Enhancement (R&E) Program. The Bradshaws, and additional volunteers, assisted with the feeding, maintenance, and spring release of 50,000 spring Chinook salmon smolts and 40,000 winter steelhead smolts.

Clear Creek Acclimation Facility Construction

STEP, in conjunction with the Oregon Wildlife Heritage Foundation and the ODFW Fish Restoration and Enhancement Board, constructed a new acclimation facility on Clear Creek near the Clackamas River. This will be a cooperative project with Clackamas County Parks and will be located within Carver Park. Fish culture activities will still be managed by STEP, and performed by STEP volunteers. Both spring Chinook salmon and steelhead will be acclimated and released from this new facility.

Mid-Willamette STEP

ODFW fish propagation programs in the Mid-Willamette basin have evolved greatly over the last decade. With greater emphasis now placed upon the restoration and conservation of the basin's wild fish resources and the current federal listings of upper Willamette spring Chinook salmon and winter steelhead under the Endangered Species Act, the STEP District's fish culture program looks much different from that of the 1980's. Concern surrounding the potential impacts of introduced fry upon native populations, and the primary need for habitat enhancement in those streams identified as deficient in natural production, have changed the focus of the program's efforts.

Fish Eggs-to-Fry Classroom Program

As an educational program the Fish Eggs-to-Fry Program, it is without a doubt one of the most successful and cost effective ways to teach a large number of students about salmon and trout biology. In addition, students and adults participating in the program come away from the experience with a respect and appreciation for salmon and trout, and for their habitat. In the Mid-Willamette STEP District, schools with students from kindergarten to high school and from urban and rural areas participate in the program.

Eggs are delivered to each classroom by ODFW staff or STEP volunteers. A brief presentation or question/answer period helps to prepare the students for the project and convey the importance of their effort. Individual volunteers, members of the Senior Fishing Buddies, and members of the Albany Chapter Northwest Steelheaders provide invaluable assistance with the classroom egg incubation program. These volunteers have recruited and "adopted" a number of schools in their local areas for which 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 a STAC Mini-Grant, they have placed incubators in area schools.

Spring Chinook salmon fry were released into the North Santiam, South Santiam and Calapooia River Basins. Rainbow trout are released at a number of selected locations scattered throughout the valley including reservoirs and many local, isolated ponds. The fry stocking program in the ponds has had surprising success. One location is Pagoda Pond at the 4-H Center near Salem where hundreds of children every year participate in outdoor school and summer camp fishing programs.

Upper Willamette STEP

High Cascade Lakes Stocking

Over 100 STEP volunteers participated in the bi-annual High Cascade Lakes backpack stocking program. Volunteers stocked over 80 lakes with fingerling trout.

Fish Eggs-to-Fry Program

More than 10,000 spring Chinook salmon eggs were incubated by 85 teachers in 52 different schools as part of the Classroom Incubator Program. The unfed fry were released by individual teachers during December at Alton Baker Canoe Canal in Eugene.

McKenzie River Trout Stocking

STEP worked with the McKenzie River Guides Association and local hatcheries to stock over 35 continuous river miles of the McKenzie River with legal-sized rainbow trout. The guides navigate an ODFW stocking boat downriver while the STEP volunteers net fish into the river.

North Coast STEP

Volunteer Hatchery Programs

The Tillamook Anglers continue to operate Whiskey Creek Volunteer Hatchery, releasing almost 100,000 spring Chinook salmon smolts and an additional 100,000 fall Chinook salmon fry into the Wilson and Trask Rivers. The Nestucca Anglers also continue to operate Rhoades Pond, rearing almost 32,000 fall Chinook salmon smolts for release into Three Rivers and the Nestucca.

Broodstock Collection

This year, the wild winter steelhead broodstock collection programs continued on the Nestucca and Wilson Rivers. Over 50 volunteer anglers participated in these programs, collecting over 250 wild winter steelhead to be used as broodstock by ODFW hatcheries.

Mid-Coast STEP

Broodstock Collection

Wild winter steelhead broodstock collection programs on the Alsea and Siletz Rivers were supported by numerous highly enthusiastic volunteer anglers, collecting wild winter steelhead to support the popular winter steelhead fisheries on those rivers.

Fish Acclimation Projects

Over 100 volunteers from the Florence STEP Group and the Emerald Empire Chapter of the Association of the NW Steelheaders continue to operate the winter steelhead adult capture and smolt acclimation projects in the Siuslaw Basin on Whittaker Creek, Green Creek and Letz Creek. Volunteers conducted significant maintenance work at the Siuslaw steelhead trapping facilities with an entirely new trap being constructed at Green Creek and a major overhaul taking place at Whittaker Creek trap. The work at Whittaker Creek will make the trap operate more efficiently and will also make the site more secure from criminal activity. A new storage area for all the trap parts was arranged at the Lane County Public Works office in Florence after the theft of fifty-percent of the trap components this past summer.

Significant time and effort was donated by the Florence STEP Group to build a new hatchery house and dry room at the Munsel Creek Egg Incubation Facility. After the Florence STEP Group spent much of its own budget on the project, several private individuals donated from $300 to $1,500 dollars to help complete the work.

North Depoe Bay Creek

The Depoe Bay Salmon Enhancement Commission (SEC) continued to operate a small coho salmon hatchbox project on North Depoe Bay Creek, releasing 12,000 to 15,000 smolts from 20,000 eggs. This program has significant community educational value through informational signage, public tours and the volunteer fin-clipping day.

Umpqua STEP

Broodstock Collection

Low fall Chinook salmon returns along the Oregon Coast resulted in production goals not being met for both the Umpqua Fishermen’s Association (UFA) and Gardiner-Reedsport-Winchester Bay (GRWB). However coho salmon and winter steelhead brood collection goals were met.

Marking

The UFA conducts its own fin marking, and was able to maxillary clip over 30,000 Chinook salmon using their volunteer labor. This was a great "warm up" for this coming spring as the UFA will be marking 200,000 fish.

Acclimation and Release

Two separate "sets" of winter steelhead acclimations and releases took place this past year at Eastwood Elementary School, Canyon Creek acclimation site, and the Seven Feather acclimation site. These events not only contribute additional winter steelhead and therefore angling opportunities in the basin, but also provide a great educational experience for local students and adults.

Tenmile, Coos, and Coquille STEP

Large numbers of volunteers continue to be involved in the extensive fish cultural programs in the District. There are 8 broodstock development, 8 spawning, 17 egg incubation, 6 rearing, and 19 acclimation projects in the District. The fish cultural operations in the District involve the largest number of volunteers in recent years.

Broodstock Collection

Broodstock collection and development programs in the District continue to be a success overall. Volunteers involved in the collection of naturally produced salmon and steelhead for incorporation into hatchery programs donated a significant amount of time. The collection of naturally produced salmonids is always very labor intensive. For the past 20 years a significant proportion of the steelhead have been acquired through angler donations. In the Coos River basin, about 60% of the steelhead broodstock were again donated by anglers. Angler donations are a slow, time-consuming process that involves many volunteers.

Fry Releases

The District STEP Biologist coordinated the collection and distribution of salmon and steelhead eggs from ODFW hatcheries or STEP incubation facilities to volunteers. As a result, 203,179 fry were released from a variety of hatchboxes in the Coos and Coquille basins. Most of the unfed fry releases are conducted as a rehabilitation project. The fry are released above human-made barriers to upstream migration. Coho and steelhead fry are released for one life-cycle. For coho and steelhead that is three and four years, respectively. The Chinook salmon fry releases in the Coquille River basin are conducted for the purpose of a payback program. These fry are a replacement for the loss of production of wild Chinook salmon that are taken and used in the lower river smolt program.

Large numbers of Chinook salmon presmolts are released in the Coos River Basin. The premise behind the releases is the recognized limitation of spawning habitat in the Coos watershed that is available for Chinook salmon. While spawning habitat for Chinook salmon is, to this day, very

limited the Coos Estuary is the largest in Oregon. Chinook salmon rear extensively in Oregon coastal estuaries. The Chinook salmon presmolt program in the Coos addresses the limited spawning habitat by producing large numbers of juveniles to utilize the Coos Estuary. The total number of Chinook salmon presmolts released into the Coos Basin was 2,231,628 in the spring of 2008.

Fewer numbers of fall Chinook salmon presmolts are released into the Coquille River basin. In 2008, a total of 54,322 presmolts were released. Chinook salmon presmolts are usually reared and released from the campus of Coquille High School. During this report period 40,430 were released into the upper river in an attempt to increase the number of Chinook salmon spawners in both the North and South Forks of the Coquille. Chinook salmon presmolts are usually only reared and released from Coquille High School.

Egg Incubation

The STEP Biologist provided fish cultural assistance to volunteers at 17 incubation sites. This fish cultural assistance is demanding because of the complexity and magnitude of the incubation programs in the District. Many of the cooperators incubating eggs are new each year and need special attention. Egg incubation is a complicated process. During the report period, one incubation site incubated over one-million fall Chinook salmon eggs at a time for the second year in a row.

Again this year the number of classroom egg incubation projects also increased in the district. A total of 10 classroom incubators were operated at 9 different schools. Many of the students at each school participated in spawning the eggs that go into the classroom aquaria. These classroom aquaria are invaluable teaching tools that truly impart resource awareness to thousands of children each year. More classroom aquaria are planned in the near future.

Coos Fall Chinook Monitoring and Evaluation Plan

The STEP Biologist directed a total of 6,785 volunteers to be involved in the fish cultural programs in the District. Fin-marking of the reared fish, which is part of the Coos Fall Chinook Monitoring and Evaluation Plan, demands a larger number of participants than any other volunteer project. A main objective of the Monitoring and Evaluation Plan is to increase the number of fin-marked fall Chinook salmon released in the Coos River Basin. This increased fin-marking started in the spring of 2007. Volunteers and students had a very challenging spring to fulfill the requirements of the fin-marking. A total of 647,019 fall Chinook salmon were marked this past spring at five different facilities.

Over 1,000 students and volunteers were involved in the fin-marking portion of the monitor and evaluation plan. Forty-two school groups devoted an entire day to the marking at five facilities. The school groups provided invaluable support to the required marking project. Most of the students were involved in spawning the Chinook salmon earlier in the season.

Rearing and Acclimation

Volunteers operated a total of 23 rearing or acclimation projects during the report period. Acclimation sites continue to be improved with each passing year. These projects take a considerable amount of volunteer and staff time along with financial resources to operate.

The reconstruction of the Morgan Creek Hatchery's fish facilities in the summer of 2007 was a very large project that involved hundreds of volunteers. These new facilities were successfully used to trap, hold, and spawn. A total of 1,827 Chinook salmon were trapped and held in this new facility. The egg take goal for the basin was achieved because this facility was constructed. By the end of this reporting period, there was a very large bank and boat fishery targeting Chinook salmon returning to Morgan Creek.

In the spring of 2008, these new facilities were used to rear fall Chinook salmon for the first time. The new facilities, combined with excellent care from volunteers, reared very good quality fish for release. Volunteers and department staff are optimistic about the potential success of this facility in the years to come.

Lower Rogue STEP

Volunteers reared 71,192 fall Chinook salmon smolts and 29,010 unfed fry to supplement the lower Rogue fishery. Volunteers assisted in collecting 369 fall Chinook salmon and 102 winter steelhead for district hatchery programs. In addition, Boy Scouts maintained a hatchbox that raised 9,412 fall Chinook salmon unfed fry at Euchre Creek.

Upper Rogue STEP

The STEP Biologist and two volunteer college students sampled kidneys, spleens and ovarian fluid from freshly spawned Chinook salmon in Bear Creek to check for the presence of infectious hematopoetic necrosis virus in Chinook salmon returning to Bear Creek to spawn.

A volunteer and some high school students captured *Gambusia* spp. (mosquito fish) in the ponds at Crater Land Lab for a fish health check during the summer of 2008.

Fish Salvage

Volunteers salvaged 3,908 juvenile steelhead, coho salmon, redside shiners, sculpin and suckers from streams in the Rogue River basin that dried up during the spring and summer of 2008. Twelve volunteers worked 128 hours and drove 405 miles to move the fish to flowing waters.

Thirteen volunteers spent 54 hours trapping and hauling juvenile steelhead from East Jones Creek to flowing waters downstream from the Grants Pass Irrigation District (GPID) canal crossing near Grants Pass. Each year when the canal is watered up, the flow of Jones Creek is captured in the canal along with any fish that did not migrate out early.

The Middle Rogue Steelhead Chapter of Trout Unlimited is currently working with GPID to develop a solution, probably a chute for the GPID canal that crosses above Jones Creek.

An irrigation diversion dam about 1.5 miles up Murphy Creek dries the stream during the summer months from the dam to the mouth. Downstream migrating juvenile fish have been captured at the dam site and hauled downstream to the Applegate River since 1980. Annual catches have varied from as few as 25 fish to as many as 7,800. In 2008, 263 juvenile coho salmon were captured in the trap, along with several Pacific Giant Salamanders and crayfish. Five volunteers moved the fish in 118 hours and drove 222 miles.

Eastern Oregon STEP

Fish Eggs to Fry: Classroom Incubators

Thirty classrooms from all over Eastern Oregon, including Klamath Falls, Milton-Freewater, Elgin, Drewsey and Vale, raised trout in classroom incubators and used STEP publications, Fish Eggs To Fry and The Educator's Resource Guide for Hatching Salmon in the Classroom. The STEP biologist coordinated the classroom trout incubator projects and trained volunteers to assist teachers and give presentations. Fifteen volunteers spent over 80 hours delivering trout eggs, presenting related materials and assisting teachers with setup and trout release. All trout were released in ponds or reservoirs.

APPENDICES

Appendix 1: Salmon and Trout Enhancement Program Advisory Committee (STAC)

STAC Position	Member	Term[1]	Expires
Lower Willamette	Norman Ritchie	2nd	June 2011
Lower Willamette	Rosemary Furfey	1st	June 2010
Mid-Willamette	Bill Hastie	1st	March 2012
Upper Willamette	Lauri Mullen	1st	July 2009
North Coast (Seaside-Astoria)	Tod Jones	1st	September 2009
North Coast (Tillamook-Pacific City)	Robert Rees	1st	August 2009
Mid-Coast	Tom Petersen	2nd	July 2011
Umpqua	Mike Brochu	1st	June 2009
Tenmile, Coos, and Coquille	Armand Peña	2nd	July 2011
Lower Rogue	Richard Heap	1st	March 2009
Upper Rogue	Gary Enoch	1st	August 2009
Eastern Oregon (Central-Southeast)	Dave Dunahay	1st	September 2010
Eastern Oregon (Northeast)	Sammie Mosley	1st	November 2011

[1] A maximum length-of-service policy of two 4-year terms was implemented in 1996.

Appendix 2: Oregon Department of Fish and Wildlife Salmon and Trout Enhancement Program (STEP) Staff

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Appendix 3: Schools that work with STEP

The following is a partial list of schools and school districts that work with STEP. This includes schools conducting volunteer projects and those participating in the Classroom Incubator Program. Also included are the universities and community colleges whose student interns with or volunteer for the program. Due to the large number of schools, it is possible that some were inadvertently left off this list. Please contact the STEP Program Assistant at 503-947-6211 if your school has been overlooked.

Elementary, Middle, and High Schools

Albany Christian
Altamont Elementary
Astoria High School
Azalea Elementary
Barlow High School
Bear Creek Elementary School
Blossom Gulch Elementary
Bonanza Elementary School
Brighton Academy
Buckingham Elementary School
Camas Valley School District
Cascade Elementary School
Cascade Middle School
Central Christian School
Central Elementary School
Chapman Hill Elementary School
Chiloquin Elementary School
Clackamas High School
Clara Brownell Middle School
Clover Ridge Elementary School
Condon Grade School
Conger Elementary
Coquille High School
Corvallis School District
Crook County Middle School
Culver High School
Eastwood Elementary
Elk Meadow Elementary
Elton Gregory Middle School
Englewood Elementary
Evergreen Elementary
Falls City High School
Ferguson Elementary School
Fremont School
Frost Elementary School
Gervais Middle School
Hallman Elementary School
Hamilton Creek Elementary School
Harriette Elementary School
Hartman Middle School
Hathorne Elementary School
Heppner High School
High Lakes Elementary School
Hines School
Hoover Elementary School
Jane Goodall Environmental Middle School
Jefferson Elementary School
Jefferson High School
Jewell Elementary School
John Tuck Elementary School
Judsn Middle School
Juniper Elementary School
Knappa High School
LaPine Elementary School
LaPine Middle School
Lava Ridge Elementary School
Liberty Elementary School
Linus Pauling Middle School
Lyle Elementary School
M.A. Lynch Elementary
Madras Elementary School
Mark Twain Middle School
Marshfield High School's "Destinations"
Miller Elementary School
Millicoma Intermediate School
Monroe Elementary School
Newby Elementary School
North Bend High School
North Salem High School
North Sherman Elementary School

Appendix 3 (continued)

Oakland School District
Oregon School for the Deaf
Parkdale Elementary School
Pendleton High School
Peterson Elementary School
Philomath Elementary School
Philomath High School
Phoenix School District
Pilot Butte Middle School
Pine Eagle High School
Pine Ridge Elementary School
Pioneer Elementary School
Reynolds High School
Riddle High School
Riley Creek Elementary School
Roseburg High School
Roseburg School District
Santiam High School
Seaside High School
Sherman High School
Sisters Middle School
Siuslaw Middle School
Sweet Home Charter
Terrebonne Community School
The Dalles Middle School
Three Rivers School
Tillamook High School
Tom McCall Elementary School
Tumalo Elementary School
Turner Elementary School
Vale Elementary School
Warrenton High School
Westside Elementary School
Westside Magnet School
Whitworth Elementary School
Willow Creek Elementary School
Winston School District
Yoncalla School District

Colleges and Universities
Oregon State University
OSU Extension
Reed College

Appendix 4: Groups that work with STEP

The following is a partial list of volunteer organizations, agencies, and other groups that work with STEP. Due to the large number of participants, it is possible that some groups were inadvertently left off this list. Please contact the STEP Program Assistant at 503-947-6211 if your group has been overlooked. 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
7 Oaks
Adair Village Summer Program
Alsea Guides
ANWST - Association of Northwest Steelheaders
ANWST - Albany Chapter
ANWST – Brookings Chapter
ANWST - Emerald Empire Chapter
ANWST – Mid-Coast Chapter
ANWST - Salem Chapter
ANWST - Sandy River Chapter
ANWST - Tualatin Valley Chapter
Backcountry Horsemen
BASA Steelheaders
BassMasters
Brookings Senior Center
Camp Rosenbaum
Camp UKANDU
Cascade Family Flyfishers
Cal-Or Guides Association
Central Coast Flyfishers
Central Oregon Flyfishers
Central Oregon Llama Association
Child Advocacy Center
Coastal Conservation Association
Confederated Tribes of the Grande Ronde
Coos River STEP
Coquille River STEP
Cow Creek Band of Umpqua Indians
Creeks & Kids
Curry Anadromous Fishermen
Depoe Bay Salmon Enhancement Commission
Eel/Tenmile STEP
Eugene NWS
Federation of Fly Fishers
First Church of the Nazarene
Florence STEP
Gardiner-Reedsport-Winchester Bay STEP
Gold Beach Rotary
High Desert Museum
Indian Creek Café
Joe's Sporting Goods
KBSC Viewers
Klamath Country Flycasters
Longview Hills Fishing Club
McKenzie Family Flyfishers
McKenzie River Guides Association
Middle Rogue Steelheaders
Millicoma STEP
Molalla River Keepers
Molalla Native Fish Society
Moose Lodge
Nestucca Anglers
Nestucca Connections
Oregon Museum of Science & Industry
Oregon Equestrian Trails Volunteers
Oregon South Coast Fisherman (OSCF)
Oregon Trout
Oregon Zoo
Partnerships for Umpqua Rivers
Pepsi
Rainland Flycasters
REALMS
Redding Boy Scouts
Residents of Murphy Creek Road
Rogue Fly Fishers

Appendix 4 (continued)

Organizations
Salmon Watch
Sand Ridge Charter
Santiam Flycasters
Senior Fishing Buddies
Siletz Guides
SOLV
South Coast Fishermen
Sunriver Anglers
Tenmile STEP
Tillamook Anglers
Tillamook Bay Boating Club
Tillamook Estuaries Partnership
Trout Unlimited
U'da Man Chinook Advocates
Umpqua Fishermen's Association
Upward Bound
Veneta Boy Scouts
Weyerhaeuser
Wolftree, Inc.
Women Flyfishing Club
Yaquina Salmon Enhancement
YMCA

Government
Bureau of Land Management
Charleston Fire Department
City of Brookings
City of Camas Valley
City of Fairview
Coos Bay Fire Department
Coos Forest Protection District
Deschutes National Forest
NOAA Fisheries
North Bend Fire Department
Oregon Department of Forestry
ODFW Fish Restoration and Enhancement Program
Oregon State Parks
United States Forest Service

Watershed Councils
Clackamas River Watershed Council
Deschutes Valley Water District
Clackamas River Basin Council
Lower Nehalem Watershed Council
Middle Rogue Watershed Council
Nehalem Watershed Council
Salmon Drift Watershed Council
Sandy River Watershed Council
Siletz Watershed Council
Siuslaw Watershed
The Dalles Watershed Council
Tillamook Bay Watershed Council
Upper Rogue Watershed Council