

# SALMON AND TROUT ENHANCEMENT PROGRAM (STEP)

## 2016-2017 Annual Progress Report



*Prepared by the Oregon Department of Fish and Wildlife  
4034 Fairview Industrial Dr.  
Salem, Oregon 97302*

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## BACKGROUND AND SUMMARY

This report summarizes the activities and accomplishments of the Salmon and Trout Enhancement Program (STEP) from October 1, 2016 to September 30, 2017. 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 (ORS 496.430 through 496.465) and Oregon Administrative Rule (OAR 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 (NFCP), Fish Hatchery Management Policy (FHMP), and the Fish Health Management Policy (FHMP). 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 those areas 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 the STEP Program, Oregon’s salmon and trout resources, and their habitats. Projects include classroom incubators (also known as the “Fish Eggs-to-Fry Program”), presentations, classes, volunteer training, tours, displays, printed materials, 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.

- **The 25-year Angling Enhancement Plan** was adopted in February of 2010 to outline strategies for providing diverse, stable and productive angling opportunities and facilitate an increase in angling participation. Because of its strong connection to the volunteer base, and the local needs and interests, STEP is used to directly address recreational fishing priorities; specifically, opportunity, access and mentoring. While the focus is on youth anglers and families it also provides direct and indirect benefits to all anglers.

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 percent federal with 25 percent state match). The program consists of a coordinator and administrative assistant, located in the ODFW headquarters office in Salem. Staff divides their time between the STEP program and the Restoration and Enhancement Program. STEP is implemented in the field by 11 STEP biologists (nine 1.0 FTE and two 0.5 FTE) located throughout the state.

In addition, program oversight is provided by the thirteen-member STEP Advisory Committee (STAC) comprised of citizens appointed by the Governor. The committee advises the Oregon Fish and Wildlife Commission (Commission) and ODFW on policy and the implementation of STEP and presents the STEP Annual Progress Report to the Commission. The committee also administers the STAC Mini-Grant Program, funded through a \$50,000 biennial grant from the ODFW Fish Restoration and Enhancement (R&E) Program. The Mini-Grants are available in amounts up to \$2,000 for projects that further the goals of STEP and are reviewed for approval by STAC at their two-day meetings. From October 2016 to September 2017, meetings were held in Salem, Portland, and Medford.

Within each watershed management district, the STEP biologist fill several roles including fish and habitat biologist, educator, outreach specialist, community or technical advisor, and lead for volunteer management. The program works with a variety of individuals, groups and organizations including adult and youth volunteers, angling and conservation interests, watershed councils, soil and water conservation districts, 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.

## Summary of Current Efforts

The following summarizes accomplishments of the program in 2016-2017:

- More than 57,800 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 1,600 youth and adult volunteers. This includes 820 individual Fish Eggs-to-Fry classroom projects that reached over 32,000 students.
- Over 700 volunteers contributed over 7,200 hours on 95 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).
- Over 500 miles of waterways were improved for fish use by 1075 volunteers through fish passage, in-stream, riparian and fish carcass placement projects and the Keep Oregon River's Clean program (Table 3).

- STEP volunteers assisted with rearing and releasing of nearly 3.8 million Chinook salmon, Coho salmon, steelhead and trout for enhancement or augmentation purposes; 2.1 million of these fish were reared (fed and cared for) before release and over 7,000 broodstock fish were collected (Table 4).
- The agency continues to implement the 25-Year Angling Enhancement Plan. Major accomplishments by STEP include continuing to improve access to local angling sites and improved family fishing events.
- Promoting close and easy access to angling opportunities and providing simple, low cost fishing opportunities for youth and families (i.e. still-water, “bait and bobber”) continues to be a priority for STEP. Assistance by STEP volunteers to restore inland trout fisheries will continue.

As indicated by the amount of work accomplished, volunteers made a substantial contribution to STEP and ODFW. Because STEP activities are an integral part of accomplishing ODFW’s fish management objectives, ODFW staff also contribute time and resources to the program beyond what is funded by the SFR grant.

Highlights of the 2016-2017 statewide volunteer efforts include:

- 2,250 youth and 3,850 adult volunteers participated in STEP activities
- Volunteers participated in an estimated 1,417 projects, totaling 75,860 hours. This is equivalent to 36.5 full time employees.
- Using the estimated dollar value of \$27.69 for volunteer time in Oregon for 2016, the value of STEP volunteer hours was over \$2,100,000

Since the program was established in 1981, more than 372,000 adult and youth volunteers (Figure 1) have contributed nearly 3.75 million hours (Figure 2) to over 42,000 STEP projects. In the 36 years since STEP was founded volunteers have donated the equivalent of over \$103.6 million in time and energy. 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:

- Appendix 1. A list of the current STAC members
- Appendix 2. A list of the current STEP biologists

## Tables and Figures

Table 1. Education and development activities, participation and volunteer effort by STEP district, 2016-2017. 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

STEP District	Activities	Participants	Volunteers			
			Youth	Youth Hours	Adults	Adult Hours
Coos-Coquille	8 (129)	4,949	0	0	18	95
Eastern Oregon	21 (75)	7,220	0	0	210	1,927
Lower Rogue	52 (9)	3,496	29	115	377	3,126
Mid-Coast	26 (67)	8,652	11	74	326	5,199
Mid-Willamette	76 (138)	10,848	0	0	131	738
North Coast	9 (19)	2,729	0	0	133	1,100
North Willamette	31 (193)	6,191	0	0	127	984
Umpqua	32 (33)	3,436	0	0	172	1,218
Upper Rogue	29 (53)	5,888	6	2	28	115
Upper Willamette	29 (104)	4,460	0	0	21	171
STAC	3 (0)	10	0	0	13	800
<b>Total</b>	<b>319 (820)</b>	<b>57,879</b>	<b>46</b>	<b>191</b>	<b>1,556</b>	<b>15,472</b>

Table 2. STEP inventory and monitoring activities, miles affected and surveyed and volunteer effort, 2016-2017. Activities were defined as those projects having at least one participant or volunteer.

### INVENTORY AND MONITORING

STEP District	Activities	Miles Affected	Miles Surveyed	Volunteers			
				Youth	Youth Hours	Adults	Adult Hours
Coos-Coquille	2	28	28	8	32	9	36
Eastern Oregon	16	38	47	0	0	63	1,905
Lower Rogue	11	287	21	35	69	70	1,179
Mid-Coast	9	0	0	26	222	134	1,670
Mid-Willamette	15	0	22	165	206	35	230
North Coast	1	0	12	0	0	15	252
North Willamette	4	258	0	0	0	5	106
Umpqua	4	7	10	0	0	31	704
Upper Rogue	12	17	1	10	49	28	379
Upper Willamette	21	36	24	16	27	56	162
<b>Total</b>	<b>95</b>	<b>671</b>	<b>165</b>	<b>260</b>	<b>605</b>	<b>446</b>	<b>6,623</b>

Table 3. Habitat restoration activities, miles affected and restored and volunteer effort by STEP district, 2016-2017. Activities were defined as those projects having at least one participant or volunteer.

HABITAT

STEP District	Activities	Miles Affected	Miles Restored	Volunteers			
				Youth	Youth Hours	Adults	Adult Hours
Coos-Coquille	0	0	0	0	0	0	0
Eastern Oregon	0	10	0	0	0	35	210
Lower Rogue	10	74	2	282	567	28	210
Mid-Coast	8	51	37	2	10	83	432
Mid-Willamette	28	35	1	0	0	2	230
North Coast	10	76	0	39	78	5	10
North Willamette	31	57	58	170	495	64	417
Umpqua	2	2	0	26	156	8	48
Upper Rogue	15	104	0	180	504	129	1,098
Upper Willamette	10	4	4	1	9	22	101
<b>Total</b>	<b>114</b>	<b>413</b>	<b>102</b>	<b>700</b>	<b>1,819</b>	<b>376</b>	<b>2,756</b>

Table 4. Fish culture activities and volunteer effort by STEP district, 2016-2017. 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

STEP District	Activities	Number of Fish			
		Broodstock Collected	Incubated	Reared	Released
Coos-Coquille	18 (129)	5,841	1,415,276	1,390,597	2,355,575
Eastern Oregon	4 (75)	0	23,600	0	84,450
Lower Rogue	6 (9)	172	53,151	42,981	68,409
Mid-Coast	9 (67)	240	309,093	40,074	418,089
Mid-Willamette	0 (138)	0	30,600	0	30,600
North Coast	19 (19)	371	155,660	250,002	167,042
North Willamette	31 (204)	0	87,408	421,734	501,577
Umpqua	8 (33)	325	22,552	23,403	153,302
Upper Rogue	6 (53)	215	4,800	0	16,541
Upper Willamette	4 (104)	0	11,200	0	8,461
<b>Total</b>	<b>105 (831)</b>	<b>7,164</b>	<b>2,113,340</b>	<b>2,168,791</b>	<b>3,804,046</b>

Volunteers

STEP District	Youth	Youth Hours	Adults	Adult Hours	Total Hours
Coos-Coquille	1,019	5,764	176	3,523	9,287
Eastern Oregon	12	96	54	513	609
Lower Rogue	19	124	120	5,001	5,125
Mid-Coast	19	300	153	4,545	4,845
Mid-Willamette	0	0	0	0	0
North Coast	160	4,250	696	13,501	17,751
North Willamette	0	0	88	699	699
Umpqua	10	80	171	9,850	9,930
Upper Rogue	0	0	5	19	19
Upper Willamette	7	28	17	112	140
<b>Total</b>	<b>1,246</b>	<b>10,642</b>	<b>1,480</b>	<b>37,763</b>	<b>48,405</b>

Figure 1. Number of volunteers who participated in STEP activities, 1981-2017. Values for 1981-1990 and 1993 are estimates. (Note 1: 2016: Due to staff changes and vacancies the total available activities was reduced and some hours/volunteers were not reported.) (Note 2: 1986-1990 and 1993 were updated in 2011 based on discovery of a 1993 report.)

**Number of STEP Volunteers**

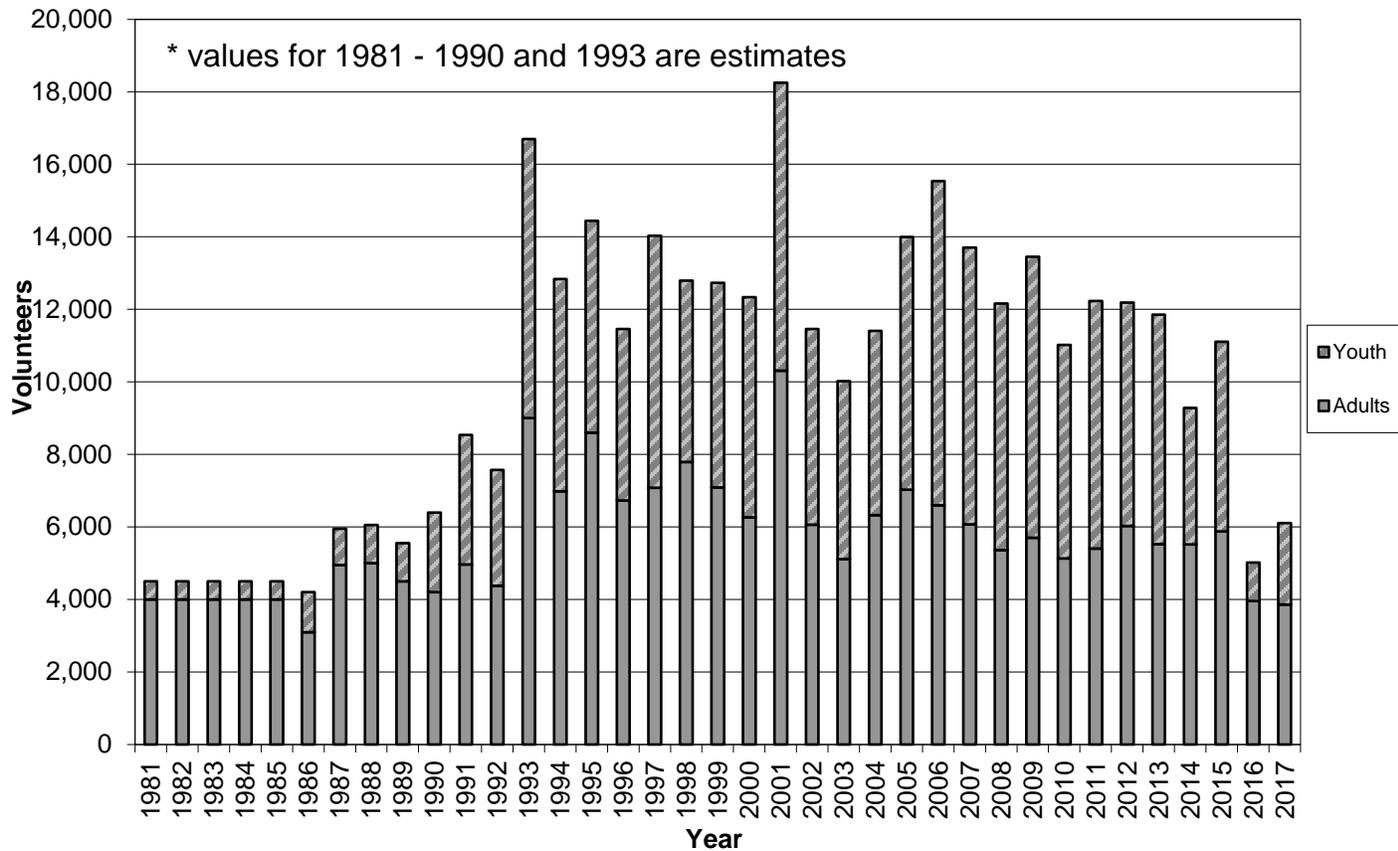
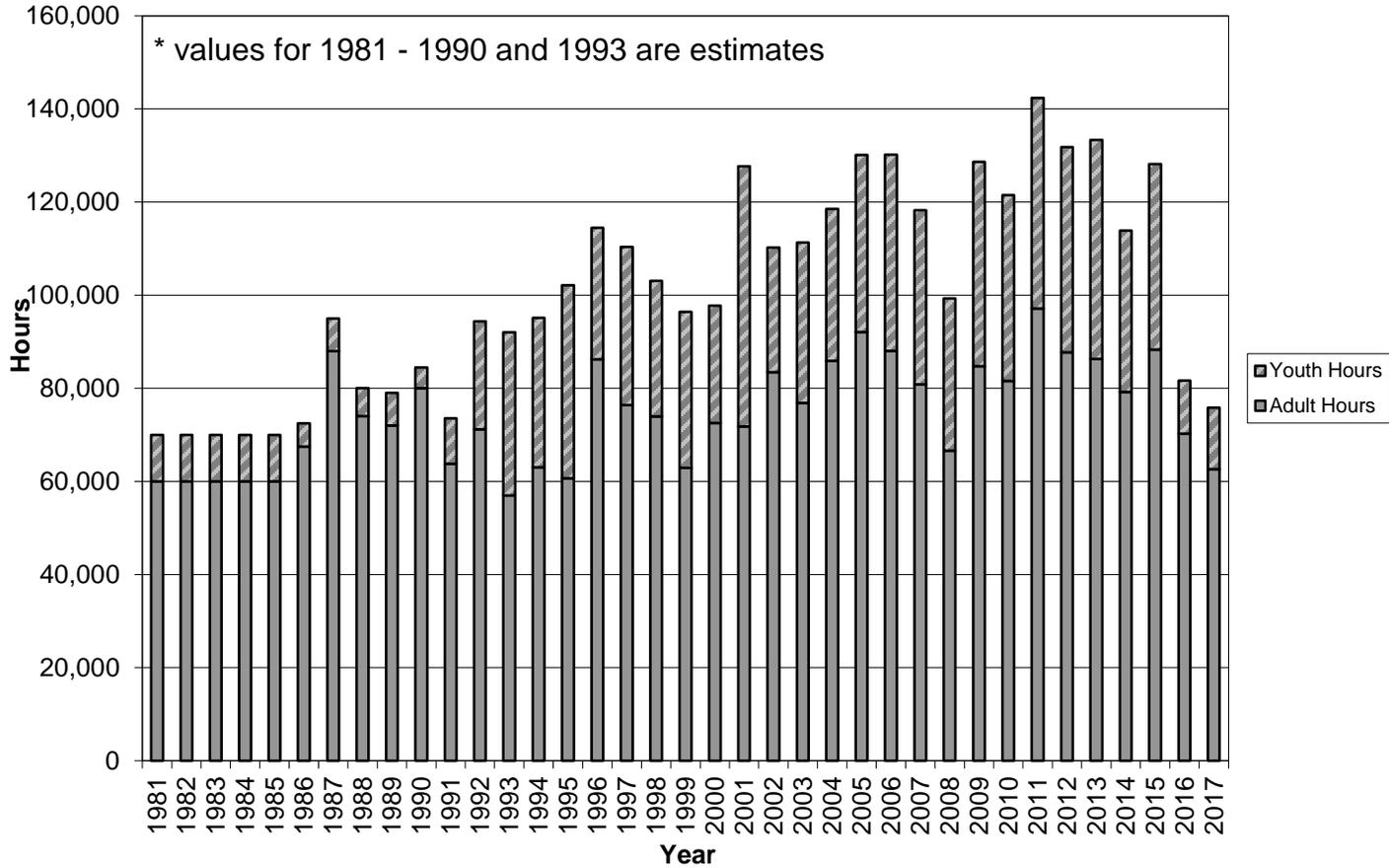


Figure 2. Hours contributed by volunteers towards STEP activities, 1981-2016. Values for 1981-1990 and 1993 are estimates. (Note 1: 2017: Due to staff changes and vacancies the total available activities was reduced and some hours/volunteers were not reported.) (Note 2: 1986-1990 and 1993 were updated in 2011 based on discovery of a 1993 report.)

### STEP Volunteer Hours



## INTRODUCTION

### Education and Program Development

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

*FishWorks*, a quarterly newsletter, is published to highlight STEP and R&E Program activities and provides information on upcoming events and the value of projects to fish management.

### Inventory and Monitoring

Volunteers assist ODFW 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.

### Habitat Improvement

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
- In-stream 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.

STEP is in a unique position in that it can bring all aspects of restoration under one program. These include pre and post project monitoring, technical guidance, equipment, labor, outreach, and access to funding.

KORC program was created to collect and recycle discarded angling line and tackle continued in 2016-2017. Currently, over 100 stations have been installed and are being maintained by volunteers within the fish districts.

## Fish Culture

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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 three to five 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 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, ODFW 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 has provided program activities some legal protections such as not having to obtain water rights for approved STEP projects. 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

## 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 mission is to provide ongoing and improving angling opportunities, improvements to habitat for fish and wildlife, and a continuing contribution to the quality of life that people in this area have come to enjoy and expect.

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 warm water angling opportunities with several species of warm water 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 strives 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.

### EDUCATION AND PROGRAM DEVELOPMENT

#### Family Fishing Events

STEP coordinated and produced ten Family Fishing Events in the NWWD, continuing the efforts of getting local youth and adults actively involved and interested in fishing. STEP was also responsible for district's popular Free Fishing Weekend fishing event at St Louis Ponds, attended by over 500 youth and adult anglers. With most of the people in the district residing in urban areas, holding these close-in events provides opportunities for participants of all ages to experience the outdoors while discovering that they can remain close to home.

For 2016-2017 the events were held at Blue Lake in Fairview, Canby Pond in Canby, St. Louis Pond in Gervais, Trojan Pond in Rainier, Mt Hood Community College Pond, Shorty's Pond in Molalla, Timber Lake, and Sheridan Pond in Sheridan. Family Fishing Events attracted attendance in excess of 3,000 adult and youth participants, many of them first-time anglers. Several hundred trophy trout in addition to legal-



*Photo 1: Successful anglers at the Mt. Hood College Pond FFE.*

sized trout were stocked for the events.

Under the guidance of the STEP biologist, volunteer groups including the Association of Northwest Steelheaders (ANWS), ODFW Angler Education Instructors, and members of the angling community provided assistance in teaching kids about fishing, handling their catch and selecting the right equipment, as well as how to interact with the environment. Volunteers also assisted in setting up equipment and provided help at the registration areas. More than 115 volunteers donated nearly 950 hours of time helping to make these events successful.

### Fish Eggs-to-Fry Program

NWWD STEP has been a leader in the Eggs-to-Fry program for several years and continued to see interest and growth in the classroom incubator program in 2016-2017. An expanding enthusiasm and desire to integrate the program into classroom curriculum again brought several new teachers to STEP, with the participation numbers approaching 200 classrooms. These incubation projects hatched eggs and released nearly 82,000 unfed salmon and trout fry into a dozen different STEP-approved lakes, ponds, and streams within the NWWD. Several local chapters of the ANWST, the local OSU Extension Service (4-H), CREST, the Clackamas River Basin Council, OMSI, Oregon Zoo and Reed College sponsored classroom incubation projects in schools around the greater Portland Metro Area. With the tremendous growth of the program, its success would not be possible without the dedication of the many volunteers donating over 475 hours of time.



*Photo 2: Eggs to Fry salmon eggs waiting to hatch in aquarium*

### Other Outreach

STEP staff continued to write the angling recreation report for the NWWD, providing updated information to local anglers about all types of fishing opportunities in the area. This report is published weekly on the ODFW website and is one of the most visited destinations on the site.

STEP staff attended monthly meetings of several local angling groups, keeping this valuable volunteer base aware of upcoming opportunities and issues. Monthly meetings also provide a venue to show appreciation for volunteer efforts.

STEP staff participated in several outreach activities by attending summer camps, assist at local non-ODFW produced fishing events, and visiting area classrooms to perform fish dissections or discuss STEP in the schools and career opportunities in the natural resource fields.

STEP staff represented the NWWD at the 2017 Oregon State Fair providing information and updates about ODFW activities and STEP opportunities in the NWWD and around Oregon.



*Photo 3: Clackamas HS students working on a dissection as part of a salmon carcass placement activity.*

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## INVENTORY AND MONITORING

### Sandy River Broodstock Collection

STEP, along with the Sandy Chapter of ANWS and other volunteers, assisted NWWD staff performing weir trap monitoring on the Sandy River in an effort to avoid possible vandalism and accidental injury. STEP volunteers also assisted in broodstock collection at the traps along with sorting and passing of wild spring Chinook salmon, steelhead, and Coho.

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## HABITAT IMPROVEMENT

### Stream Nutrient Enrichment Program

The 23rd year of the district's stream nutrient enrichment program was completed with cooperation from the Clackamas Hatchery, Sandy Hatchery, the United States Forest Service, and the USFWS Eagle Creek Hatchery. The carcasses are intended to mimic historic run densities of spawning Chinook, steelhead, and Coho salmon in area streams and increase stream nutrient levels for aquatic organisms.

Over 50 youth volunteers and over 60 adult volunteers contributed to the project, placing nearly 37,000 pounds of steelhead, Coho, and Chinook salmon carcasses in the Sandy River Basin, the Clackamas River Basin, the Lower Columbia River Basin, and the Yamhill River Basin. Carcass placement numbers were down this year, but only due to a lack of returning salmon providing carcasses to be placed. The enthusiasm and demand to participate was as high as ever, but fish returns limited volunteer opportunity. Volunteers from the ANWS, students from various local schools, SOLV (Stop Oregon Litter and Vandalism), members of the Sandy River Watershed Council and Clackamas River Watershed Council, the NW Flyfishers, and the Confederated Tribes of the Grande Ronde assisted with the carcass distribution effort.



*Photo 4: Two Clackamas HS student ready to toss a couple carcasses off the foot bridge into Clear Creek at Metzler Park.*

### Line and Tackle Collection

North Willamette STEP now has Keep Oregon Rivers Clean (KORC) stations in place along ten rivers and lakes. These line and tackle collection stations can be found on the Sandy River, Clackamas River, Blue Lake Park, Herman Creek, St Louis Ponds, Canby Pond, Salish Ponds, Benson Lake, Promontory Park at North Fork Reservoir, and the Columbia River at Rooster Rock State Park and Dalton Point Park, most maintained through volunteer efforts. NWWD STEP is also seeking new opportunities to place KORC stations in additional popular fishing spots within the district.

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## FISH CULTURE

### Fish Acclimation Projects

Acclimation facilities have been a key component of fish release strategies in the NWWD for several years and operation of these facilities is an important function of STEP. Releases from acclimation sites are intended to coincide with hatchery production and provide increased angling opportunities on the Willamette, Clackamas, Sandy and Molalla rivers. Recent improvements in local fisheries can be credited to these acclimation projects and their success can be directly attributed to the efforts of volunteers and the nearly 700 hours they contributed to the projects this past year.

Since the spring of 2013 an acclimation pond has been operated on Trout Creek near its confluence with the Molalla River. Daily operation of this facility is performed entirely by volunteers from the Coastal Conservation Association (CCA) and the ANWS. During March and April of 2017 over 100,000 Chinook salmon smolts were acclimated and released from the facility in an effort to improve runs that have been struggling in recent years. As hoped, smolt releases in 2015 returned to the Molalla as adults in spring of 2017 in good numbers, providing another year of spring Chinook salmon fishing on the river.

The Foster Creek Acclimation Facility continued to be a productive site for STEP. A change in management was made for 2014 at the Foster site. Since survival and return of summer steelhead appeared to be exceptional we increased the number of steelhead releases and direct released the spring Chinook smolts in line with the hatchery practices. Over 25,000 summer steelhead smolts were released from Foster Pond, and over 51,000 winter steelhead smolts were acclimated and released into the Clackamas River in the early spring of 2017. The 2017 summer steelhead fishery was a repeat of 2016 as one of the most successful seen in years on the river and once again the winter steelhead fishery didn't disappoint. With daily guidance of STEP, volunteers maintained the facility, performed all fish culture activities, and assisted with release. Anglers have seen a very productive fishery develop in this section of the Clackamas River in recent years, likely due to these smolt releases.



*Photo 5: Making fish prints as part of the salmon studies offered by NWF at Trinity Lutheran School.*

The Clear Creek Acclimation Facility was completed and put into production in spring of 2009. Spring of 2017 marked the ninth year of releases from this site. Feeding and daily maintenance was performed by volunteers from the McLoughlin Chapter of the ANWS who donated 80 hours to this project. In excess of 130,000 spring Chinook salmon smolts were acclimated and released to provide additional returns of adult spring Chinook to the extremely popular Willamette River and Clackamas River sport fisheries.

The Eagle Creek Acclimation Facility, located at Eagle Fern Park on Eagle Creek, was completed and put into production in early 2010. With funding from an R&E grant provided by the Oregon Wildlife Heritage Foundation, this facility was built from the ground up on the banks of Eagle Creek a few miles up from the confluence with the Clackamas River. For the 2017 acclimation season these Chinook smolts were once again moved upstream to be raised and released at Eagle Creek National Fish Hatchery in a cooperative effort with US Fish and Wildlife Service. The smolts were maintained at the hatchery by ODFW employees. Future plans are being discussed, including increased winter steelhead releases to take place from the Eagle Creek Acclimation Facility.

The Bull Run River Acclimation Facility saw its seventh year of production in 2017 at the site of the decommissioned PGE Bull Run Powerhouse. Releases of spring Chinook salmon from this acclimation site are part of a district strategy to address problems involving stray rates of Sandy Hatchery spring Chinook by giving the salmon a return destination away from the wild fish sensitive Upper Sandy Basin. The effort is proving to be successful as returns to the lower river have improved while stray rates have decreased. All spring Chinook smolts in the Sandy River are now released at this acclimation site instead of at Sandy Hatchery so management of this facility by volunteers is critical. The site at Bull Run saw over 113,000 spring Chinook smolts

released in spring of 2017, with volunteers from the Sandy Chapter of ANWS contributing over 200 hours and over 450 miles of travel.

Broodstock Collection

The collection of broodstock winter steelhead on the Clackamas River and spring Chinook salmon on the Sandy River was completed with assistance from the NW Steelheaders, individual volunteers, and local fishing guides. This project is instrumental in NWWD fish management goals and would not happen without the help of these volunteers contributing over 105 hours of their time.

Liberation

STEP provided regular back up support for NWWD trout stocking activities in 2016-2017, both by assisting Region fish liberation truck drivers at stocking sites and driving a portable liberation truck, delivering fish directly to local water bodies. The assistance of volunteers was often critical in completing successful stockings at difficult to access locations.

**Schools and Groups that work with Lower Willamette STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b></p> <p>Ainsworth Elementary School          Alberta Rider Elementary School          Alliance Charter Academy          Alpha HS          Archbishop Howard School          Arleta Elementary School          Astor School          Banks Elementary School          Barlow HS          Barnes Elementary School          Beaver Creek Elementary School          Bilquist Elementary School          Boeckman Creek Elementary School          Bolton Primary School          Boones Ferry Primary School          Boring MS          Bridlemile Elementary School          Buckman School          Carus Elementary School          Cascade Academy          Catlin Gabel Lower School          Cedar Oak Park School          Chehalem Elementary School          City View Charter School          Clackamas HS          Clackamas River Elementary School          Clarkes Elementary School</p>	<p>Opal Charter School          Oregon Trail Academy          Orenco Elementary School          Patterson Elementary School          Peterson Elementary School          Pioneer Special School          Pleasant Valley School          Portland Waldorf School          Powell Valley Grade School          Poynter MS          Quatama Elementary School          Rachel Carson Environmental MS          Raleigh Park Elementary School          Raleigh Hills School          Renaissance School of Science          Rex Putnam HS          Reynolds HS          Ridgewood Elementary School          Riverdale Grade School          River Mill Elementary School          Rosedale Elementary School          Sabin-Schellenberg Center          Salish Ponds Elementary School          Sandy Grade School          Sauvie Island Academy          Scappoose HS          Schools Heights Elementary          Sexton Mtn Elementary School</p>
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<p>Colton MS  Cornelius Elementary School  Creative Science School  CREST/West Linn-Wilsonville SD  Deep Creek Elementary School  Deer Creek Elementary School  De La Salle N. Catholic HS  Earl Boyles Elementary School  Early Learning Community School  East Sylvan MS  Echo Shaw Elementary School  Emerson School  Estacada HS  Estacada Junior High  Ewing Young Elementary School  Farmington View Elementary School  Faubion School  Fir Grove Elementary School  Five Oaks MS  Floyd Light MS  Forest Hills Lutheran School  Forest Park Elementary School  Fowler MS  Franklin HS  Free Orchards Elementary School  Gaffney Lane Elementary School  Gladstone HS  Gordon Russell MS  Greenway Elementary  Gresham HS  Grout Elementary School  H.B. Lee Elementary School  H.B. Lee MS  Happy Valley Elementary School  Harvey Clarke Elementary School  Hogan Cedars Elementary School  Imlay Elementary School  Indian Hills Elementary School  Inza Wood MS  Jackson MS  Jacob Wismer Elementary School  Joseph Gale Elementary School  Ladd Acres Elementary School  LaSalle Prep School  Lee Elementary School  Lenox Elementary School  Lents Elementary School  Lewis Elementary School</p>	<p>Sitton Elementary School  Skyline School  Spring Mtn Elementary School  Springwater Environmental Sciences School  St. John Fisher School  St. Paul Elementary School  St. Rose School  St. Thomas Moore School  Sunnyside Elementary School  Sunnyside Environmental School  Sunstone Montessori  Stafford Primary School  Stoller MS  Sweetbriar School  SW Charter School  Terra Linda Elementary School  Tom McCall Upper Elementary School  Trillium Creek Primary School  Trost Elementary School  Tualatin Valley Academy  Valley Catholic Elementary School  Verne Duncan Elementary School  View Acres School  Walt Morey MS  Westgate Christian School  Westridge Elementary School  West Linn HS  West Sylvan MS  West T.V. Elementary  Whitford MS  Willamette Primary School  Winterhaven School  Witch Hazel Elementary School  Wood MS  Woodland Elementary School</p> <p><b>Colleges and Universities</b>  Mount Hood Community College  OSU 4-H Extension Service  Reed College</p> <p><b>Organizations</b>  Association of Northwest Steelheaders</p> <ul style="list-style-type: none"> <li>• Sandy Chapter</li> <li>• Tualatin Valley Chapter</li> <li>• McLoughlin Chapter</li> <li>• Molalla Chapter</li> <li>• Newberg Chapter</li> </ul> <p>Coastal Conservation Association  NW Flyfishers</p>
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<p>Life Christian School  Lillies Pad Learning  Lincoln HS  Lincoln St. Elementary School  Linwood Elementary School  Lowrie Primary School  Mabel Rush Elementary School  MCA Public Charter School  McKinney Elementary School  Meek Pro Tech HS  Miller Education Center  Milwaukie HS  Minter Bridge Elementary School  MITCH Charter School  Molalla River Academy  Molalla River MS  Mt Tabor MS  North Plains Elementary School  Oak Creek Elementary School  Ogden MS  Oregon Episcopal School</p>	<p>S.O.L.V.  NODR  Get Hooked, Inc.  <b>Government</b>  The Confederated Tribes of Grande Ronde  Metro Parks  City of Fairview  Oregon State Parks  Project YESS  Tualatin Hills Parks &amp; Recreation  US Forest Service  Clackamas County Parks  Weyerhaeuser Timber Co.  City of Portland/Water Bureau  U.S. Fish and Wildlife Service  Clean water Services  Oregon Zoo  <b>Watershed Councils</b>  Clackamas River Basin Council  Sandy River Basin Council  Tualatin River Basin Council  Johnson Creek Watershed Council</p>
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## Mid-Willamette STEP

Karen Hans, STEP Biologist

Alex Farrand, Assistant District Fish Biologist

Elise Kelley, 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 river systems flow from the western slopes of the Cascades into the Willamette (North Santiam, South Santiam, and Calapooia). Another five (Glen/Gibson, 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. Native among these include spring Chinook salmon, winter steelhead, 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 is upon the native salmonids, the program through its educational, monitoring, and habitat efforts also provides benefits to the basin's many other native fish.

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 ESA 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.

Because the area's population is large and still growing, STEP must 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.

## EDUCATION AND PROGRAM DEVELOPMENT

### Technical Assistance

During this period, the STEP Biologist gave presentations detailing fish resources, management issues and ODFW volunteer opportunities to a variety of interests including: students, teacher or other educational organizations; angler and conservation groups; Watershed Councils; and other federal, state, and local agencies. 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 road related repair or culvert replacements in Linn, Lane, Benton, and Polk Counties, Department of State Lands regulatory actions, and habitat restoration projects throughout the district. The STEP Biologist is a member of the Oregon Watershed Enhancement Board Region 3 Technical Review Team; Long Tom Watershed Council, Calapooia Watershed Council, and Luckiamute Watershed Council's technical teams. During the contract period the STEP Biologist attended 23 meetings, offering technical advice and fishery perspectives on a variety of educational programs and district fish issues.

### 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. In 2016 – 2017 the STEP Biologist, or STEP volunteers, participated in 9 Outdoor Schools during the school year for students from schools in Peedee, Lebanon, Sweet Home, Philomath, Lyons, Scio, Alesia, Albany, and Salem. During the summer months, the STEP Biologist hosted learning stations at summer camps hosted by the City of Corvallis and Benton County Parks & Recreation.



*Photo 6: Kings Valley Charter School students cleaning their fish at outdoor school.*

In 2016 – 2017 the STEP Biologist, along with volunteers from the Albany Chapter of ANWS and ODFW Angler Education Instructors hosted 13 fishing events for the Boy Scouts and OSU Extension Service (4-H). These events included a fishing event for the Wounded Warriors Project and their families. The event was organized by the Mid Valley Chapter of the Association of NW Steelheads, and STEP coordinated volunteers from ODFW's Angler Instructors Program to assist. In addition, two fishing events for children with special needs and their families were hosted by volunteers from the Mid Valley Chapter of the Association of NW Steelheads, STEP, and from ODFW's Angler Instructors Program.

At summer camps with a fishing station, students catch trout and sunfish, and learn about catch and release techniques. At outdoor schools with fish biology stations, students learn about fish anatomy, physiology, environment adaptations, habitat needs, watershed process, and challenges posed by humans to fish and their habitat. 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.

The STEP Biologist also teaches watershed process to students at outdoor schools or at their schools. Two camp facilities have in-ground “river boxes” or a portable stream table is brought to the school to show how stream systems function.

Summer camps at the 4H Center provide opportunities to reach children from underserved demographic and increase the diversity of anglers. In the summer of 2017, STEP partnered with ODFW’s Angler Education Instructors and OSU Extension service to host the fishing station at summer camps for children from the Latino Community, inner city neighborhoods, and for children with serious health issues. Many of these children rarely, if ever, have the opportunity to experience the natural world.

One of the STEP Biologists most popular activities are fish dissection at district area elementary, middle, and high schools. Steelhead smolts and mini jack salmon from the South Santiam Hatchery are frozen individually each year and are then used for the dissections. Students work in teams to dissect the fish. Volunteers from the ODFW’s Angler Education Program, STEP, and the Mid Valley Chapter of ANWS as well as many parents and school volunteers assist with the dissection. For many students, this is their only opportunity to do a dissection on any type of animal as opposed to a plastic model or virtual computer program. The STEP biologist includes information on fish biology, such as how fish hear, see, detect odors, and osmoregulate in fresh and saltwater, as well as similarities between fish and human biology. The STEP Biologist will also dissect an adult salmon or steelhead carcass at Family Science Night events. In 2016 – 2017, the STEP Biologist and volunteers hosted fish dissections at 12 elementary, middle school, high school classes in the district. One of the fish dissections hosted by the STEP Biologist was for students participating in the Wildlife Stewards Conference at Muddy Creek Charter School in Corvallis. With the assistance of volunteers from Chemeketa Community College, about 100 2<sup>nd</sup> to 5<sup>th</sup> grade students from Corvallis are schools dissected a fish. The STEP Biologist also hosted fish dissection for the Afterschool STEM Program at Monroe Elementary School.

The STEP Biologist sits on the Linn-Benton Salmon Watch Steering Committee. The committee meets year round to plan for Salmon Watch field trips in September, October and November. Students from 5<sup>th</sup> and 6<sup>th</sup> grade travel to rivers where salmon are spawning to learn about water quality, macroinvertebrates, riparian areas, and salmon biology.

In addition to being on the steering committee, the STEP Biologist trains volunteers and teachers, as well as participating in several field trips each year. In 2016 and 2017, the STEP Biologist attended four Steering Committee meetings, hosted two Salmon Watch outreach events, assisted with three trainings, and hosted the Fish Biology station for seven Salmon Watch field trips.

The passage of a ballot measure 99 provided the funding for outdoor schools and offered the opportunity for STEP to make contributions to the planning and implementation of the new program. The STEP Biologist offered to sit on one of the implementation committees and was selected for the Research and Evaluation Workgroup. The committee’s primary task is to devise surveys for teachers and students to evaluate if the outdoor school learning objectives are being met. The STEP Biologist attended 3 Outdoor School Workgroup meetings and spent many hours reviewing documents for the committee.

## **INVENTORY AND MONITORING**

### Fish Populations and Their Habitat in Streams

STEP again led the district’s small stream sampling effort with fish surveys and hoop traps. These efforts involved students from local schools and district area landowners. 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 and surveys will be used in the future to plan habitat restoration projects.

### Jane Goodall Environmental Middle School

In the Salem area, students from Jane Goodall Environmental Middle School assisted the STEP Biologist to sample local streams with seine nets and electroshocking. For this ongoing study, students collected fish, macroinvertebrate, and habitat data on a restored section of Waln Creek



*Photo 7: Checking a fish trap in NF Ash Creek with Talmadge Middle School students.*

in Salem. Data from the sampling efforts will be used to produce a fish presence report on Salem area streams. The report will be made available to City, County, and State Agencies, as well as citizen groups and watershed councils.

In 2016 – 2017, the STEP Biologist coordinated with a teacher from Talmadge Middle School in Independence to work a fish trap in NF Ash Creek behind the school. The 6<sup>th</sup> and 7<sup>th</sup> grade students from David Beatley’s science

class assisted with deploying the trap and checking it for fish. The trapping project was part of a larger program sponsored by the Luckiamute Watershed Council, and funded by an OWEB grant, to restore the riparian area of NF Ash Creek. Mr. Beatley’s class also hatched salmon and trout in their classroom for the Egg to Fry Program.

## **HABITAT IMPROVEMENT**

### Partnerships and Technical Assistance

Because 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 to conduct stream nutrient enrichment, in-stream and riparian habitat, and fish passage restoration projects.

During 2016-2017, the STEP Biologist attended 12 site visits to offer technical and grant seeking advice to landowners throughout the district. The STEP Biologist provided technical advice to the Pringle Community, USFWS, US Forest Service, Bureau of Land Management, as well as the Calapooia, Luckiamute, North Santiam, South Santiam, Long Tom, Rickreal and Mary’s River Watershed Councils on the fish passage and habitat restoration projects.

### 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. To replicate historic abundance and distribution, carcasses are placed in

rivers and streams in the district. In 2016 – 2017, salmon and steelhead carcasses that were used as brood for programs at the Minto and Foster Fish Collection Facilities were placed in the North Santiam, South Santiam and Calapooia River Basins.

Volunteers from STEP, the Mid Valley Chapter of NW Steelheads, Oregon State University, and staff from the US Forest Service and US Army Corps of Engineers contributed 65 hours toward carcass enrichment efforts in the mid-Willamette district. In all, approximately 3360 spring Chinook salmon (67200 lbs.) and 830 (8300 lbs.) summer steelhead carcasses were distributed to the 27 miles of the North Santiam, South Santiam, and Calapooia Rivers and their tributaries. Distributing Chinook salmon carcasses from the Foster Fish Collection facility was aided by staff from the US Forest Service Sweet Home Ranger District. Of the total fish out planted to the South Santiam River Basin, the USFS staff distributed hundreds of fish to Canyon, Soda Fork, and Moose Creeks where instream habitat structures have been placed by the US Forest Service and South Santiam Watershed Council.



*Photo 8: Sweet Home High School students from the South Santiam Youth Watershed Council pitch steelhead carcasses in Wiley Creek.*

### Fishing Line Collection Stations

Since 2004, volunteers in the Mid-Valley STEP District have maintained a series of fishing line collection stations. The stations are located on the North Santiam River at Stayton Boat Ramp, John Neal Park, North Santiam Park, Fishermen’s Bend, and Mill City Boat Ramp. On the South Santiam River, collection stations are located at Waterloo Park (2), Wiley Park, Sunnyside Park, and Foster Reservoir. There is also a line collection station at EE Wilson Pond.

## **FISH CULTURE**

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 ESA, 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 Program

The Egg-to-Fry Classroom Program within the District is for educational purposes only and is not intended to contribute to fish production goals. However, as an educational 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. In 2016 – 2017, 67 classrooms raised 18,500 spring Chinook salmon and 41 classrooms raised 11,000 rainbow trout. Due in part to a grant program sponsored by STEP, most teachers in the Mid-Willamette District now have aquariums and chillers loaned out for the program. This has

contributed to a significant increase in the number of teachers participating in the Egg to Fry Program in the Mid-Willamette District.

Eggs are delivered to each classroom by ODFW staff or volunteers. A brief presentation helps to prepare the students for the project and convey the importance of their effort. STEP volunteers, members of the ODFW's Angler Education Instructors, and Mid Valley Chapter of ANWS 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 ODFW's Angler Education Instructors have been particularly active in the Salem and Corvallis areas where, with financial assistance from a STAC Mini Grant, they have placed incubators in area schools.

Spring Chinook salmon fry were released into the Willamette, North Santiam, South Santiam, and Calapooia River Basins wherever the fish were historically present. 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 Oregon 4-H Center near Salem where hundreds of children every year participate in outdoor school and summer camp fishing programs.

## Schools and Groups that work with Mid-Willamette STEP

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b></p> <p>Ashbrook Independent School          Albany Options High School          Albiqua Independent School          Bethany Charter          Blodgett Elementary          Calapooia Middle School          Cascade High School          Central High School          Central Linn Elementary          Cloverdale Elementary          Community Roots Montessori School          Crescent Valley High School          Corvallis High School          Franklin School          Hallman Elementary          Hoover Elementary Corvallis          Gilbert Children’s Museum          Jefferson Elementary          Jefferson Elementary Corvallis          Kalapuya Elementary          Kings Valley Charter          Linn Benton Juvenile Detention Center          Liberty Elementary          Monroe Elementary          Monroe High School          Mt View Elementary          North Albany Elementary          North Albany Middle School          North Salem High School          Oak Grove Elementary          Philomath High School          Pratum Elementary          Pringle Elementary          Riverview Elementary</p>	<p>Riviera Christian School          Santiam Christian School          Schirle Elementary          Seven Oak Middle School          Silver Crest School          Straub Environmental Learning Center          Stayton Middle School          Salem Heights Elementary School          South Salem High School          South Shore Elementary School          Turner Elementary          Waldorf Charter School          Whitworth Elementary          Wilson Elementary</p> <p><b>Organizations</b></p> <p>Association of Northwest Steelheaders</p> <ul style="list-style-type: none"> <li>• Mid Valley Chapter</li> <li>• Salem Chapter</li> </ul> <p>Salem Boys &amp; Girls Club          Salmon Watch</p> <p><b>Government</b></p> <p>Benton County Soil and Water</p> <p><b>Watershed Councils</b></p> <p>Calapooia Watershed Council          Luckiamute Watershed Council</p>
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## Upper Willamette STEP

Katherine Nordholm, STEP Biologist  
Kelly Reis, Assistant District Fish Biologist  
Jeff Ziller, District Fish Biologist

The Upper Willamette STEP district coordinates volunteer efforts to maintain, protect, restore, and evaluate native populations and habitats of salmon and trout within the headwaters of the Willamette River. Spanning the Willamette Valley from the Coast Range to the Cascade Mountains, the district encompasses the Eugene-Springfield metropolitan areas, the third largest population area in the state. The major watersheds in the district are the Coast Fork Willamette, McKenzie, and Middle Fork Willamette rivers.

Spring Chinook salmon are the only anadromous salmonid native to the area, although a small winter steelhead run has been established in the Middle Fork Willamette River. Resident and fluvial populations of rainbow trout, cutthroat trout, and bull trout are also found within the district. Hatchery spring Chinook salmon, summer steelhead, and rainbow trout are released in various streams and rivers within the district. In addition, rainbow, cutthroat, and brook trout are released into a number of lakes in the High Cascade Mountains to provide unique, often remote, fisheries. Spring Chinook salmon and bull trout are federally listed as “Threatened” under the Endangered Species Act.

In addition to salmon and trout, STEP activities regularly monitor and provide benefits to a wide swath of other native fish species. Native sculpins, dace, shiners, suckers, stickleback, and other species have been incorporated into sampling projects and educational outreach. Additionally, many projects designed to benefit salmon and trout also benefit resident brook and anadromous Pacific lamprey, in addition to other native species. Pacific lamprey are both economically and culturally important to the native peoples of the area.

ODFW staff in the Upper Willamette district take a collaborative approach to resource management. Implementation of 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 activities throughout all fish management activities. Additionally, many STEP activities would not be possible without collective partnerships with other divisions in ODFW. We would like to recognize the staff at Leaburg Hatchery, McKenzie Hatchery, Willamette Hatchery, and Dexter Ponds for their dedication to working with STEP. Their support and assistance are vital to the success of many projects each year.

While the STEP volunteer base draws largely from local organizations, including the McKenzie Flyfishers, Cascade Family Flyfishers, Trout Unlimited, Coastal Conservation Association, McKenzie River Guides Association, Backcountry Horsemen, and the three local watershed councils, many of our active STEP volunteers are not affiliated with any group or organization. Additionally, STEP staff work with industrial timber companies on a variety of habitat evaluation and improvement projects within the district. ODFW staff regularly attend meetings and make presentations to organizations, schools, universities, and other agencies to facilitate the free flow of information, as well as answer questions, solicit ideas for new STEP projects, and recruit additional STEP volunteers.

## EDUCATION AND PROGRAM DEVELOPMENT

### Technical Assistance

The STEP biologist served on the Lane County Salmon Stewards Steering Committee, which, in partnership with the McKenzie Watershed Council, provides experiential environmental education to over 1,000 local students each year through the Salmon Watch<sup>®</sup> program. The committee consists of representatives from the Bureau of Land Management, Forest Service, Eugene Water and Electric Board, local school districts, and other area organizations.

STEP staff provided technical assistance to the Middle Fork Willamette Watershed Council by serving on their Education Committee. This committee focuses on the development and expansion of place-based environmental education programs. These programs are being implemented in many underserved rural schools.

### Youth Education

STEP staff and volunteers hosted three Family Fishing events located in Cottage Grove and Eugene. These events provided families with the chance to borrow a fishing rod, obtain instructions on casting, and catch one of the many trout that were stocked in each of the locations. These events continue to be popular, and repeat participants are seen each year. The third event, held at Eugene's Alton Baker Park, occurred on Free Fishing Weekend.

An additional fishing event was added this year when the STEP program partnered with Cumulus Media to host a kid's fishing derby at Alton Baker Park in Eugene. The fishing derby, held over Father's Day weekend, was supported similarly to a family fishing day; the STEP program provided fishing equipment and volunteers to help kids learn to fish. Additionally, STEP tagged 200 fish which were worth prizes when caught. Cumulus Media provided sponsor booths, advertising, the tags, and prizes.

STEP staff participated in a number of Salmon Watch field trips this year at Carmen Smith Spawning Channel along the McKenzie River and Whittaker Creek in the Siuslaw River basin. During these field trips, local students learn about salmon ecology, including lessons on macroinvertebrates, riparian zones, water quality, and salmon biology. The STEP biologist led Salmon Watch volunteer training for the salmon biology station at both training events held this year.

STEP staff organized and held two fishing workshops for The Arc Families Connected Summer Recreation Co-op. This group is part of eight family networks set up throughout the state to help families who are raising a child with a disability. At each workshop, families had the opportunity to watch trout being stocked into Leaburg Lake, and receive fishing instruction from STEP and Angler Education volunteers. STEP provided equipment, volunteers, instructions, and a fish cleaning station. ODFW staff from Leaburg Hatchery also helped at these events.



*Photo 9: Middle and high school girls learn to fly fish on Carmen Reservoir as part of Girls in the Woods week. The program in Willamette National Forest is hosted by the U.S. Forest Service.*

STEP staff and volunteers hosted two summer camp fishing days for Bridgeway House, a school for students with autism. During these summer camps, students worked with volunteers to learn safe fishing techniques, as well as how to catch and clean fish. Each student was able to receive one-on-one instruction to help them adjust to the new activity.

The STEP biologist led the planning, coordination, and supervision of an intern this year. The summer intern from Oregon State University participated in fish stocking, educational activities, fish monitoring, and general district work. He has since returned to the program as a STEP volunteer.

### Program Outreach

Staff and STEP volunteers gave several presentations to diverse audiences and participated in several community events including:

- Boy Scout Leaders Round Table – Fishing Regulations and Opportunities
- McKenzie River Trust - Walk The Land Day
- Willamalane - Movie in the park showing of *Finding Dory*
- Eugene Sportsman Show – Information Booth
- Middle Fork Willamette Watershed Council - Mill Race Bike Path Tour
- OSU - Graduate Research Symposium
- Lane Community College – Water Careers Class
- Willamalane - trout fishing class
- Willamette Forest Service - Girls in the Woods week
- Row River Outdoor School – Macroinvertebrate station
- Elizabeth Page Elementary Outdoor School – Fly fishing and macroinvertebrate stations
- Cabela’s Public Workshop - How to Fish For Trout in Oregon
- SP - Fish ID training during their Western In-service Training Cascade Family Flyfishers – ODFW and STEP volunteer information
- Girl Scouts Outdoor Day – Fish dissections and stream table

## **INVENTORY AND MONITORING**

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STEP staff and volunteers worked on multiple monitoring projects for ODFW and the STEP project throughout the year.

### Spawning Surveys

Staff and a volunteer from Weyerhaeuser conducted spring Chinook spawning ground surveys on Gate Creek, a tributary to the McKenzie River. Additionally, STEP staff conducted rainbow trout redd surveys on Deer, Marten, and Gate Creeks, all tributaries to the McKenzie River. Staff surveyed Mosby Creek, a tributary to Row River (Coast Fork Willamette River basin) for evidence of spawning lamprey and Chinook salmon.

### Gold Lake Trap net Sampling

STEP staff, volunteers, and the OSU intern sampled Gold Lake (Middle Fork of the Willamette River basin) to evaluate the fish community in the lake. Data were entered into long-term records tracking brook trout and rainbow trout ratios, lengths and condition factors; a data set that goes back to 1988.

### Hills Creek Reservoir Sampling

The STEP biologist, volunteers and ODFW employees sampled hatchery trout from Hills Creek Reservoir. The project is evaluating the relative survival and contribution to the fishery of two different stocks of hatchery trout; Cape Cod vs Crane Prairie rainbow.

### Cascade Family Fly-fishers Mill Race Sampling



More than 40 members of the Cascade Family Fly-Fishers volunteered to regularly check traps located in two areas of the Springfield Mill Race. For three months, the group checked traps four times a week. The volunteers identified the fish species and collected length data. Native trout were PIT tagged with the hope of tracking them in the future.

*Photo 10: Members of the Cascade Family Fly-fishes received training in hoop trap protocol and fish identification before beginning a long-term fish sampling project in the Springfield Mill Race.*

### High Cascade Lakes Sampling

During the summer of 2017, staff, an OSU intern, and a volunteer used gill nets and hook and line sampling to determine stocked fish survival in three lakes in the Cascade Mountains.

Boy Scout Eagle Scout project also conducted fish survival surveys and collected habitat information for two additional lakes in the Cascade Mountains. Other Inventories

STEP staff and volunteers helped collect genetic samples from native cutthroat in various locations around the upper Willamette watershed as part of a larger effort to characterize genetic variability of cutthroat trout in this region.

Staff and volunteers sampled in Eugene's Delta Ponds. This sampling was to help staff from the city of Eugene who were hoping to document juvenile spring Chinook in the area.

## **HABITAT IMPROVEMENT**

### Partnerships and Technical Assistance

TEP staff provided technical input to for partner agencies and non-governmental organizations on the benefits to fish of several proposed restoration projects and land acquisitions.

The STEP Biologist served on the Coast Fork Willamette Watershed Council's Technical Committee tasked with providing technical expertise for projects sponsored by the Council.

### Mill Race Habitat Improvement Project

The STEP biologist worked to plan and implement volunteer habitat projects in the Springfield Mill Race. Habitat projects were designed to be implemented incrementally by volunteers who hand-place materials in the stream to increase the habitat complexity available to fish.

## Carcass Placement

STEP volunteers worked with Willamette and McKenzie hatchery staff to place carcasses for stream enrichment. Over 1,580 adult carcasses totaling nearly 18,960 pounds were distributed into the main stem McKenzie River and spawning tributaries. Additionally, STEP volunteers from the Coastal Conservation Association and Weyerhaeuser placed approximately 85 carcasses in Mosby Creek, on a tributary to the Row River.



*Photo 11: Lane Community College Students add gravel to improve habitat on the Springfield Mill Race.*

## **FISH CULTURE**

### Fish Eggs-to-Fry Program

Approximately 11,200 spring Chinook salmon eggs were incubated in 104 classroom aquariums in 57 different schools as part of the Eggs to Fry Program. The unfed fry were released in December, primarily at Alton Baker Canoe Canal in Eugene.

This year the Eggs to Fry Program was expanded in rural school districts by adding a winter trout egg delivery. Approximately 500 rainbow trout eggs were delivered to 4 classrooms in 2 different schools. The unfed trout fry were released in March into various locations on the Middle Fork Willamette River.

### High Cascade Lakes Backpack Stocking

This popular program provides an opportunity for volunteers to stock fingerling trout into lakes of the Cascade Mountains using backpacks. Our large volunteer backpack stocking effort happens in odd number years, so this year only one lake was stocked. Boy Scout volunteers stocked Happy Lake with 387 triploid rainbow trout. This stocking, coupled with additional monitoring for the survival of fish stocked last year, fulfilled the requirements of an Eagle Scout project.

### **Schools and Groups that work with Upper Willamette STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<b>Elementary, Middle, and High Schools</b>	
Adams Elementary	River Road Elementary
Agnes Stewart Middle School	Riverbend Elementary
Arts and Technology K-8	Shasta Middle School
Awbrey Park Elementary School	Sheldon High School
Bailey Hill Instructional Center	South Eugene High School
Bridgeway House	Twin Oaks Elementary
Buena Vista Elementary	Unity School
Camas Ridge Elementary	Village School
Cascade Middle School	Walterville Elementary
Centennial Elementary	Willamette High School
Cesar E Chavez Elementary	Yujin Gakuen Elementary
Charlemagne Elementary	<b>Colleges and Universities</b>
	Lane Community College

<p>Churchill High School  Coburg Community Charter School  Corridor Elementary  Cottage Grove High School  Dos Rios - Two Rivers Elementary School  Edison Elementary  Elizabeth Page Elementary  Family School  Gilham Elementary  Holt Elementary  Howard Elementary  Laurel Elementary  Lowell Elementary School  Maple Elementary  McCornack Elementary  McKenzie Middle/High School #68  Meadowview Elementary Mohawk High School  Mt. Vernon Elementary  Network Charter School  North Eugene High School  Oakley Middle School  Oakridge Elementary School  Pleasant Hill High School  Prairie Mountain School  Ridgeline Montessori  Ridgeview Elementary</p>	<p>Oregon State University</p> <p><b>Organizations</b></p> <p>American Fisheries Society  Arc of Lane County  Association of Northwest Steelheaders <ul style="list-style-type: none"> <li>• Emerald Empire Chapter</li> </ul> Backcountry Horsemen  Boy Scouts of America  Cascade Family Flyfishers  Girl Scouts of Oregon and Southwest Washington  McKenzie Flyfishers  McKenzie River Guides Association  McKenzie River Trust  Salmon Stewards of Lane County  Travel Lane County  Trout Unlimited: Redside Chapter  World Salmon Council</p> <p><b>Government</b></p> <p>Bureau of Land Management  City of Springfield  City of Eugene  Eugene Water and Electric Board  Lane County  US Forest Service  Willamalane Park and Recreation District</p> <p><b>Watershed Councils</b></p> <p>Coast Fork Willamette Watershed Council  McKenzie Watershed Council  Middle Fork Willamette Watershed Council</p>
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## North Coast STEP

Ron Rehn, STEP Biologist  
Mike Sinnott, Assistant District Fish Biologist  
Robert Bradley, 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 Hunt Creek. The North Coast STEP District covers all of Tillamook and Clatsop Counties, and portions of Columbia, Washington, Yamhill, and Polk Counties. This area holds fifteen major river systems and over 2,600 stream miles.

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

Volunteer groups in the area have a high interest in fish culture programs. STEP volunteers operate two fish rearing facilities and one acclimation pond, collect wild broodstock, and they provide key support to several ODFW hatcheries. The area also has 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.

## EDUCATION AND PROGRAM DEVELOPMENT

### Education and Outreach

Other outreach and educational activities that occurred this year included: exhibits at the, Vernonia Schools Salmon Watch, Tillamook School Salmon Watch, presentations to the North Coast Chapter of ANWS, and Tillamook County Children's Clean Water Festival. The Tillamook County Children's Clean Water Festival is a day-long event in which every fourth grader in Tillamook County participates in activities and hands-on interactive displays pertaining to overall watershed health. The Salmon Watch and Clean Water Festival events had 554 students that participated in these events. A new event this reporting period was a fishing clinic held for the Newport Middle School's Outdoor School. Staff and volunteers participated in an educational fishing clinic for students participating in Outdoor School. This was a half day event with instruction and hands-on angling.

### Fish Eggs-to-Fry Program

The North Coast STEP classroom incubator program this year involved delivering eggs and giving presentations to students in 13 classrooms representing 9 schools, elementary through high school, the Bay City Public Library, and the Tillamook Forest Center. These programs participated in the hatching and releasing of spring Chinook salmon, fall Chinook salmon, winter steelhead, and summer steelhead fry into approved streams. Approximately 584 students were involved in the classroom program. The Tillamook Forest Center had 11,998 visitors view the Egg-to-Fry exhibit promotion clean watershed health.

### Family Fishing Events

During this reporting period, 233 people participated in North Coast Watershed District (NCWD) Family Fishing Events and other organized fishing events. The Tualatin Chapter of ANWS provides many of the volunteers that assist the NCWD STEP program in providing guidance in basic fishing skills at these events.

The Tillamook Angler's Disabled Angler Fishing Day had approximately 365 people with disabilities participate in this year's event. Individuals with disabilities from across the state come to the Whiskey Creek Hatchery to enjoy a day of fishing, fun, and a BBQ.

### Improvements to Access & Facilities

The Tillamook Anglers with the assistance of North Coast Salmon Trout Enhancement Program (STEP) were awarded and Restoration and Enhancement (R&E) Grant of \$91,855.00 to reestablish a fishing dock on Cape Meares Lake, and create safe access for the community and users of the area. Current conditions create potentially hazardous situations for anglers fishing on the southern bank along Bay Ocean Rd which has limited area off the road shoulder to keep anglers away from traffic. A site along the SW corner of the lake has been selected to place a fishing dock and accommodate a few cars for parking. This project will not only improve access at the site, but also address safety issues and improve success by expanding out to deeper water and provide access away from traffic. The project is planned for completion February of 2018.

The liner and plumbing for the Hughey Cr. Acclimation facility was replaced summer of 2017. This was accomplished with an R&E grant of \$3,500.00 and help of District and STEP staff. This facility acclimates summer and winter Steelhead smolts for the Wilson River in addition to holding wild winter Steelhead for broodstock.

## **INVENTORY AND MONITORING**

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### Temperature Monitoring

The Salmonberry STEP Monitoring Project continues to provide valuable data through winter steelhead spawning surveys and temperature and macroinvertebrate monitoring on the Salmonberry River. This information is utilized by ODFW and many other resource groups and agencies. Headed by Ian Fergusson, the Salmonberry STEP Monitoring Project has utilized volunteers from AmeriCorps, Clark-Skamania Flyfishers, Native Fish Society, Northwest Steelheaders, Oregon Trout, Rainland Flycasters, Sierra Club, and Trout Unlimited since 1993 to carry out these monitoring projects. Thirty volunteers from the Salmonberry STEP Monitoring Project donated 252 hours last year.

### North Fork Nehalem Winter Steelhead Project

The Second Phase of the North Fork Nehalem Winter Steelhead Project evaluating the relationships between hatchery steelhead juvenile release location (hatchery volitional vs. two in-river sites) and subsequent adult catch by sport anglers has been completed. This effort explored options at improving catch rates throughout the river. For this, existing winter steelhead hatchery production were divided into three unique fin-clipped groups that were released as yearling smolts at three different points along the river (i.e. Hatchery, County Line, and Aldervale). Creel surveys on returning adults were used to evaluate their relative contribution to sport catch throughout the return period. Marking started with the 2011 brood that was released in 2012.



*Photo 12: Marking fish at Astoria High School*

Creel surveys began with the 2014-15 return year and continued through the 2016-17 return year. The creel survey followed an access-access design where both catch and effort will be estimated using access-based surveys. Data is recorded on the origin (i.e., stocking locations) and number of fish harvested and released as well as the amount of time each angler fished. Total catch of each group of fish is estimated be divided the

observed catch by the sampling probability providing valuable information on catchability of these fish.

After analysis of data from three years of creel most notable was the poor contribution of the lower release group not only in the lower river fishery, but it also trended low throughout the whole fishery. When evaluating which hatchery release method(s) would optimize fishery performance both middle and lower river release groups performed fairly similar in the upper and middle river fisheries. The lower release groups did not show any added benefit to the lower river fishery, and there was little difference between the hatchery and middle river release groups in the lower river fishery. There was a substantial difference in the performance of all groups in the lower river fishery compared to both the upper and middle sections. The middle river and hatchery releases contributed to the catch similarly in the middle river portion of the fishery, and both release strategies outperformed the lower river releases. This project also evaluated if releasing smolts lower in the system would improve retention of returning adults in the lower North Fork Nehalem. Three years of creel data showed that there was no benefit to the lower river fishery by releasing smolts at Aldervale (lower release site) relative to other sites as the catch rate was much lower for adults returning from lower river releases. Due to this, there may be little benefit transporting fish for a lower or middle river release as the same fishery benefits are achieved by releasing from the hatchery.

## **HABITAT IMPROVEMENT**

### Stream Nutrient Enrichment

As part of the ODFW stream nutrient enrichment program the STEP Biologist and other NCWD staff directed and assisted volunteers in the distribution of over 124,135 pounds of fish carcasses into 76 miles of north coast rivers and streams from the Little Nestucca to the lower Columbia River tributaries to benefit salmonids and other species.



*Photo 13: Wilson River High School carcass placement.*

## **FISH CULTURE**

### Volunteer Hatchery Programs

The Tillamook Anglers continue to operate Whiskey Creek Volunteer Hatchery and released 100,680 spring Chinook salmon smolts into the Trask River. During the 2016-17 return season the Tillamook Anglers processed 2,057 totaling 17,727 pounds of surplus salmon for the Oregon Food Bank. The Nestucca Anglers also continue to operate Rhoades Pond and released 102,898 fall Chinook salmon smolts into Three Rivers and the Nestucca River.

This year, the Wild Winter Steelhead Broodstock Collection Programs continued on the Nestucca and Wilson Rivers, and wild fall Chinook salmon on the Nestucca River. Fifty-seven volunteer anglers participated in these programs, collecting 311 wild fish to be used as broodstock by ODFW hatcheries.

High School Hatcheries

Astoria High School’s hatchery program released 9,955 Coho salmon and presmolts into Young’s Bay. Warrenton High School’s program released 6,000 Coho salmon, and 462 winter steelhead presmolts into Skipanon River. Due to low hatchery adult returns fall of 2016 to Big Creek Hatchery fall Chinook eggs were not available to STEP programs.



Photo 14: Warrenton High School tank cleaning.

**Schools and Groups that work with North Coast STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b>          Astoria High School          Broadway Middle School          East Elementary          Hilda Lahti Elementary          Jewell Elementary          Lewis &amp; Clark Elementary          Mist Grade School          Neahkahnie Middle School          Neahkahnie Elementary          Seaside Heights Elementary          Tillamook High School          Vernonia Schools          Warrenton High School          Washington Elementary</p> <p><b>Organizations</b>          Association of Northwest Steelheaders</p> <ul style="list-style-type: none"> <li>• Tualatin Valley Chapter</li> <li>• North Coast Chapter</li> </ul>	<p>Rainland Fly Casters          Rockaway Lions Club          Nestucca Anglers          Tillamook Anglers          Twin Rocks Friends Camp          WarHF, Inc.</p> <p><b>Government</b>          Oregon Dept. of Forestry          US Fish &amp; Wildlife Service</p> <p><b>Watershed Councils</b>          CREST          Ecola Creek Watershed Council          Lower Nehalem Watershed Council          Necanicum Watershed Council          Nestucca Watershed Council          Nicolai-Wickiup Watershed Council          Skipanon Watershed Council          Tillamook Bay Watershed Council          Youngs Bay Watershed Council          Tillamook Estuaries Partnership          Bay City Library          Tillamook Forest Center</p>
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## Mid Coast STEP

Christine Clapp, STEP Biologist  
Jitesh Pattni, Assistant District Fish Biologist  
John Spangler, District Fish Biologist

The Mid Coast District includes coastal watersheds from the Salmon River (Cascade Head) to Tahkenitch Lake, extending from headwater streams on the western slope of the Coast Range to their estuaries. This includes several large rivers including the Salmon, Siletz, Yaquina, Alsea, and Siuslaw. Direct ocean tributaries including the Yachats River and Beaver, Big, Tenmile, and Cummins Creeks also support Mid Coast salmonid populations. Siltcoos and Tahkenitch Lakes are two large coastal lakes in the southern Mid Coast that are especially important for Oregon coast Coho salmon. In addition to Coho, Mid Coast waters support populations of spring and fall Chinook salmon, summer and winter steelhead, Chum salmon, cutthroat trout, and other native non-game fishes.

Christine Clapp has lead responsibility for STEP program activities on the Mid Coast. The Mid Coast program works with volunteer groups, landowners, local schools, non-profit organizations, private industry, watershed councils, and state and federal agencies on a variety of projects focused on education, fisheries management and watershed conservation. Mid Coast volunteer groups include Florence STEP, the Longview Hills Fishing Club, Central Coast Fly Fishers, Depoe Bay Salmon Enhancement Commission, Alsea Sportsman's Association, Association of Northwest Steelheaders (Emerald Empire and Albany chapters), Oregon State University's Fish and Wildlife Department, Boy and Girl Scouts of America, the Angell Job Corps, Community Services Consortium, Career Tech High School, and others.

Mid Coast volunteers work with district staff on a variety of projects. Education and outreach are important features of the Mid Coast STEP and account for over 40 percent of volunteer time in the district. Mid Coast STEP also assists with fish population monitoring through the operation of six fish traps and completes habitat restoration and angler access improvement projects. The Mid Coast District also includes the Salmon Enhancement Commission's Coho STEP Program in Depoe Bay, one of the oldest STEP propagation programs in the state, and fish culture programs continue to attract many passionate volunteers who assist with district harvest objectives.

## EDUCATION AND PROGRAM DEVELOPMENT

### Fish Eggs to Fry Program

During the 2016-2017 school year, the Egg to Fry program was active in 47 classrooms representing 16 schools (preschool-12), two state park visitor's centers, four after-school programs, and two public libraries. Biologists and volunteers use the Fish Eggs to Fry program to teach students about native salmonids and their life-cycles, habitat requirements and conservation. Volunteers and staff train classroom and field assistants, deliver and maintain equipment, transport eggs, lead presentations and field trips, and coordinate with hatchery staff.

The Mid Coast Egg to Fry program generally involves an introductory classroom presentation about Pacific salmon and their life cycles during egg delivery and a multi-station field trip during fry release. In the Siuslaw school district, United States Forest Service and other partners provided field trips for participating classrooms at the Whittaker Creek Campground. Volunteers also led and/or assisted the STEP Biologist with field trips to Big Creek, Jeffries Creek, and Crowley Creek for 3<sup>rd</sup> grade students participating in the Lincoln County Egg to Fry Program. Most field trips include several education stations where students learn about macroinvertebrates

and aquatic food webs, water quality, fish habitat, watershed functions, and salmon biology through adult steelhead dissections. Dissections provide a comparative, hands-on approach to understanding salmonids and their habitat and life cycle requirements by learning about their anatomy and physiology. In 2012, the Lincoln County School District adopted the Fish Eggs to Fry Program as part of their Ocean Literacy Initiative and designated it as core curriculum for all Lincoln County 3<sup>rd</sup> graders.

### Family Fishing

Volunteers led seven successful family fishing events on the Mid Coast at Devils Lake, Olalla Reservoir, Eckman Lake, Cleawox Lake, Thissell Pond, Salmon River Hatchery and the Lhuuke Illahee Fish Hatchery near Siletz. These 7 events were attended by about 900 youth participants and more than 80 volunteers contributed over 600 hours to make these events successful. Mid Coast volunteers also spent a substantial amount of time fixing fishing equipment and putting together new fishing poles for events and after-school locations. Mid Coast STEP also manages four youth angling libraries in Lincoln City, Newport (2) and Siletz where youth can check out fishing equipment.



*Photo 15: Angler education is best when it involves the whole family. Devil's Lake family fishing event (Lincoln City).*

The Emerald Empire Chapter of the Association of Northwest Steelheaders led annual fishing events for veterans and kids with cancer, and Florence STEP taught angler education programs to Boy and Girl Scouts at Cleawox Lake. Mid Coast STEP also provided fish and angling equipment for the annual Siletz Tribe Culture Camp, where youth spend a week each summer learning about their tribal heritage and fishing for trout in the afternoons.

### Other Education Activities

The Mid Coast District hosted one ODFW intern this summer who assisted with adult fish trap operations, broodstock collection, and a habitat restoration project while learning about career opportunities in fisheries management. Mid Coast STEP also took a group of teachers to the Siletz Falls fish trap to teach them about population monitoring and fisheries resources as part of Hatfield's Sustainable Fisheries Teacher Workshop. The STEP Biologist also taught a teacher workshop during the Coastal Learning Symposium to introduce teachers to the resources available through ODFW and teach them how to lead watershed activities with their students, with or without the help and support of STEP.

Mid Coast STEP continues to teach Lincoln County 6<sup>th</sup> graders at Drift Creek Outdoor School. Topics include aquatic science (fish biology, food webs, macroinvertebrates, and water quality), angler education, orienteering and mapping. Florence STEP also hosted a watershed camp for students in the Siuslaw school district, as well as 28 fisheries and watershed based field trips in the Siuslaw Basin.

### Outreach Activities

Volunteers represented STEP at several boat and sportsmen's shows throughout the year, fundraising for Mid Coast STEP projects and recruiting new volunteers. Volunteers also planned and hosted two salmon derbies in Lincoln County, encouraging angler participation in our local

fisheries and enhancing the local economy. The Mid Coast STEP biologist gave career presentations to over 300 students at Newport and Taft High Schools as well as a presentation to students enrolled in the non-profit career training program through Oregon Tradeswomen Inc.

With the help of about 30 volunteers, the Mid Coast District donated 783 Siletz River summer steelhead to three food share organizations and 2055 Salmon River Hatchery Fall Chinook to eight Oregon food share organizations.

Mid Coast STEP continues to operate the aquatic science reference library and four youth fishing libraries in Lincoln County where kids can check out free fishing equipment and backyard bass for up to two weeks. The aquatic science reference library contains books about fish biology and ecology, watershed function, stream hydrology and ecology, and fish and macroinvertebrate identification to use for ODFW and Lincoln County School District education programs. Resources are also available to volunteers who are interested in learning more about freshwater science and salmonids.

## **INVENTORY AND MONITORING**

### Population Monitoring

Volunteers helped monitor fish populations at several fish traps including South Fork Schooner Creek, Salmon River Hatchery, Siletz Falls, Drift Creek and N. Fork Alsea in the Alsea basin, Munsel, Letz, and Whittaker creeks in the Siuslaw Basin, and Little Woahink Creek trap in the Siltcoos basin. District staff coordinated, trained and assisted volunteers in fish trap operations including correct fish handling, species and gender identification, accurate data recording, and safety procedures. Volunteers led all trap operations on South Fork Schooner Creek and Whittaker Creek and assisted with various trap maintenance projects throughout the season. Trap operations provide essential information on fish returns and stray rates for district management, and volunteers spawned 85 broodstock pairs for the Siuslaw winter steelhead hatchery program at the Whittaker Creek trap.

STEP volunteers also assisted the Marine Resources Program with hook and line surveys in the marine reserves, and Depoe Bay Salmon Enhancement Commission volunteers completed spawning surveys on North Depoe Bay Creek.

### Salmon River Hatchery

Volunteers assisted ODFW staff with the adult fish trap at Salmon River Hatchery this fall. 58 volunteers (including 7 youth) contributed over 500 hours to help ODFW donate 2055 hatchery Chinook to 8 Oregon food share organizations.



*Photo 16: Volunteers help hatchery staff sort and pass wild fish and process hatchery Chinook for Oregon food share organizations.*

## **HABITAT IMPROVEMENT**

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### Habitat Improvement

The STEP Biologist continued to manage the Riparian Lands Tax Incentive Program for the Mid Coast, checking compliance of enrolled properties and enrolling new landowners in the program to protect their riparian habitat for the benefit of fish and wildlife. Mid Coast volunteers also placed donated Christmas trees collected by Dahl Disposal into tidal channels along the lower Yaquina River to enhance rearing and refuge habitat and increase aquatic insect production for juvenile fish. In addition, Mid Coast STEP volunteers operated 45 SOLV and 15 monofilament line recycling stations throughout the year and organized litter patrols at popular beaches and fishing sites. Volunteers also organized and/or assisted with river clean-up events on the Siletz, Yaquina and Alsea rivers, as well as Whittaker Creek (Siuslaw), removing thousands of pounds of garbage from more than 100 river miles.



*Photo 17: Enhancing fish habitat on the Oregon coast (Long Prairie Creek).*

### Nutrient Enrichment

18,046 pounds of steelhead, Chinook and a few Coho were placed in approximately 60 river miles of the Mid Coast District this year including the Salmon, Siletz, Yaquina, Alsea and Siuslaw river basins.

### Angler Access

The Alsea Sportsman's Association and the Albany Chapter of the Association of Northwest Steelheaders (ANWS) continue to maintain and improve boat ramp facilities and other river access areas on the Alsea River. The Central Coast Fly Fishers also adopted Mokmak Lake as a new angling opportunity in Waldport, improving access to the lake that is now being stocked with rainbow trout.

## **FISH CULTURE**

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### Broodstock Collection

Volunteer anglers assisted with wild winter steelhead broodstock collection programs on the Siletz and Alsea rivers. Angler-caught fish contributed 42 (Siletz) and 24 (Alsea) percent of the total number of broodstock spawned this year. The rest of the fish were collected from adult fish traps at Siletz Falls and North Fork Alsea Falls by staff and volunteers between December and May. Adult fish from both rivers were spawned at the Alsea Hatchery, and their offspring will be released as smolts next spring. Mid Coast staff, volunteers, and interns also collected hatchery summer steelhead from the Siletz River. Hatchery broodstock are taken from the Siletz trap and transferred to Cedar Creek Hatchery for spawning.

The Mid Coast STEP Biologist provided coordination, technical support, and assistance to about 50 volunteers from the Florence STEP Group and Emerald Empire Chapter of ANWS who operate the Siuslaw River winter steelhead hatchery program each year. Volunteers ran adult traps and spawned fish for the upper and lower basin releases. For the lower basin releases at

Whittaker and Green creeks (85,000 smolts), ODFW staff and volunteers transported eggs and milt collected by volunteers at the Whittaker trap to the Alsea Hatchery for fertilization and incubation, and then transported those eyed eggs to Willamette Hatchery for rearing. For the upper basin release at Letz Creek (15,000 smolts), volunteers attempt to collect, spawn, fertilize, incubate, and rear fish to smolt stage all at the project site. However, the lack of adult fish returning to Letz Creek forced the program to collect their broodstock from the Whittaker Creek trap this year. In addition, the Florence STEP group usually spawns 2 pairs of Coho salmon from the Munsel Creek trap each year for a small educational program at the Florence STEP hatchery, where they incubate eggs and rear fish prior to releasing them into Munsel Lake at parr stage. However, no adult Coho returned to the Munsel Creek trap in 2016, so the Coho program did not take place this year.



*Photo 18: Volunteers count and release steelhead smolts from the Letz Creek STEP facility near Lorane.*

### Fish Acclimation Projects

Volunteers assisted with several winter steelhead smolt acclimation projects on the Mid Coast. Trapping and acclimation sites are located at Whittaker Creek, Green Creek, Munsel Creek, Letz Creek, and Palmer Creek. The Florence STEP group acclimated winter steelhead smolts at Green Creek (15,040) and Whittaker Creek (68,044). The Emerald Empire Chapter of ANWS also acclimated and released 12,973 winter steelhead smolts from the Letz Creek facility in the spring.

The Longview Hills Fishing Club, Angell Job Corps, and other STEP volunteers operated an acclimation site at Palmer Creek in the Siletz basin for 52,237 winter steelhead smolts. Volunteers camped on-site for 10 days, cleaning screens and monitoring fish daily. Angell Job Corps students also learned about survival skills and outdoor living while camping at the Palmer Creek acclimation site.

### North Depoe Bay Creek

The Depoe Bay Salmon Enhancement Commission continued to operate a Coho salmon hatchbox program that receives 20,000 eggs from the Trask Hatchery each year. Eggs were incubated in two hatchboxes along North Depoe Bay Creek and then transported to North Depoe Bay Reservoir where they rear over winter prior to release. This program is supported by the community, and youth from the Neighbors for Kids after-school program assisted with fin clipping in July, along with many other adult and youth volunteers.

### Munsel Creek Hatchery

Florence STEP volunteers operated a small hatchery on Munsel Creek to provide eyed eggs for the Siuslaw School District's Egg to Fry Program. All other eggs and milt collected from Whittaker Creek broodstock were transported to Alsea Hatchery for incubation. No Coho were trapped at the Munsel Creek trap this year, and no broodstock was obtained for the small Coho STEP Program on Munsel Creek this year.

**Schools and Groups that work with Mid Coast STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b>            Crestview Heights Elementary            Eddyville Charter School            Florence School District Stream Team            Neighbors for Kids            Nye Beach Montessori School            Oceanlake Elementary            Sam Case Elementary            Siletz Valley School            Siuslaw Elementary School            Taft Elementary            Toledo Elementary            Yaquina View Elementary            Oceanspray After-school Program            Fircrest After-school Program            Salmon Run After-school Program            Career Tech High School            Taft High School            Newport High School            Waldport High School</p> <p><b>Colleges and Universities</b>            Oregon Coast Community College            Oregon State University            Western Oregon University            Mt. Hood Community College</p> <p><b>Organizations</b>            Alsea Sportsman’s Association            Angell Job Corps            Association of Northwest Steelheaders           <ul style="list-style-type: none"> <li>• Albany Chapter</li> <li>• Emerald Empire Chapter</li> </ul>           Baptist Church of Waldport            Boy Scouts of America</p>	<p>Camp Florence            Central Coast Flyfishers            Community Services Consortium            Depoe Bay Salmon Enhancement Commission            Florence STEP Group            Longview Hills Fishing Club            Salmon Watch            S.O.L.V.E.            Trout Unlimited            U DA MAN            Newport Library            Driftwood Library</p> <p><b>Government</b>            Bureau of Land Management            United States Forest Service            NOAA            U.S. Fish and Wildlife Service            Oregon Department of Forestry            Oregon State Police            Oregon Parks and Recreation Department            Oregon Youth Authority            Lincoln County            Benton County            Lane County            Lincoln Soil and Water Conservation District            Confederated Tribes of Siletz Indians            Confederated Tribes of Grand Ronde</p> <p><b>Watershed Councils</b>            Alsea Watershed Council            Mid Coast Watershed Council            Salmon Drift Creek Watershed Council            Siletz Watershed Council</p>
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## Southwest Region

### Umpqua STEP

Evan Leonetti, STEP Biologist  
Jason Brandt, Assistant District Fish Biologist  
Greg Huchko, 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 percent of the land is forested and approximately 51 percent 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 warm water fish. STEP volunteer efforts range from educational projects and assistance with high lakes stocking to enhancing winter steelhead and fall Chinook salmon fisheries.

The Umpqua Watershed had another successful year with volunteers donating over 12,000 hours. The program completed and/or developed 50 projects this year and reached over 2,000 people with its public outreach efforts alone. Below are highlights for the four main STEP categories.

#### EDUCATION AND PROGRAM DEVELOPMENT

The Umpqua STEP biologist helped coordinate a number of different educational events that reached over 1,400 youth and 350 adults. This included four Free Fishing Day events that occurred in Douglas County, approximately 30 classroom incubators projects, as well as salmonid life-cycle classes and angler education programs.

##### Angler Education

Angler education programs took place at Bowman's Pond, Free Fishing Day events, and Reedsport. These programs focused on knot tying, identifying various game and non-game fish, and how to use different types of fishing gear. Many local volunteers participated in these events.

##### Glide Forestry Tour

The Umpqua District STEP Biologist participated in the Glide Forestry Tour where around 500 students participated in a variety of presentations on invasive species, cold and warmwater fish identification, habitat requirements and organism life cycles. Station participants included representatives from various agencies such as Douglas Forest Protection, Cow Creek Tribe of the Umpqua Band of Indians, Douglas County, NOAA, and OSU.



*Photo 19: Fishing event registration*

### Canyonville Education Events

The Canyonville acclimation site had over 400 students and 60 adults attend our releasing and life-cycle seminars. This included several different schools from southern Douglas County. There were over 75 volunteers with 6 stations for the three days of winter steelhead releasing. These different stations included the following subjects: anatomy, health condition (k-factor), trap and ladder operation, tribal culture, aquatic life, habitat, and fishing/boater safety that were all taught by volunteers. The STEP biologist did hands-on weighing, measuring and smolt condition data collection with the kids.

### Additional developments

The Umpqua STEP biologist worked with the local Tribal biologist, volunteer group, and food banks in an effort to reduce the number of hatchery fish on the spawning grounds and to supply the local community with fresh salmon for consumption. Both our winter steelhead program and Coho salmon programs have produced surplus hatchery salmon and approximately 200 fish were given to the local food banks. This program has not only been a benefit for those in need in the community but it has also proved to be a great cooperation between various organizations and agencies.

Efforts are being made to increase public outreach through increased angler education programs and working with Oregon State Parks to educate youth on fishing and fish in Douglas County. The STEP biologist worked with the local Oregon Coast Anglers to put on an angling education course in Reedsport. Oregon State Parks at Lake Marie requested the biologist attend an outdoor education series. The biologist provided information on local fishing and fish.

## **INVENTORY AND MONITORING**

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The STEP biologist coordinated volunteers and ODFW staff in monitoring steelhead, Coho and fall Chinook salmon at various trapping locations throughout the district. This data is used during angling regulation proposal reviews as well as propagation proposals.

### Galesville Reservoir

The UFA continued to monitor the success of Coho salmon stocked into Galesville Reservoir. Anglers have been collecting data on the number of Coho caught and whether or not they are fin-clipped. This information is used to help assess whether or not adult Coho stocked into the lake are successfully spawning as well as giving us an idea of how many fish are being harvested annually.

In 2016 it was determined that neither adult nor juvenile Coho salmon will be stocked into Galesville. After reviewing fisheries management plans with Douglas County and the UFA, it was determined that rainbow trout would be the only species stocked in Galesville. Other monitoring opportunities will be sought to replace this activity.

### Adult Salmon Monitoring

The Umpqua Fisherman's Association assisted the Department in monitoring wild steelhead populations in Canyon Creek. Volunteers enumerated and passed wild winter steelhead and removed hatchery fish. This information is used by the Department to monitor the hatchery winter steelhead program in the South Umpqua.

### Gardiner Lake

Additionally the Gardiner Reedsport Winchester Bay (GRWB) STEP group has been monitoring water quality on Gardiner Reservoir to help improve water quality going into the hatch house.

Water temperature, pH, dissolved oxygen, and algae will be monitored by Douglas Soil and Water Conservation and OSU Research. After changing to a moist air incubation system, the concern over the use of the lake water to incubate eggs has dropped. The information is still important for the rearing of juveniles and the holding of adults.

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## **HABITAT IMPROVEMENT**

### Carcass Placement

The Gardiner Reedsport Winchester Bay (GRWB) STEP group continued its participation in the nutrient enrichment program by placing Chinook salmon carcasses from spawning events at the hatchery into the North Fork of the Smith River.

Hatchery Coho salmon were placed by the Umpqua Fishermen's Association (UFA) into various areas of upper Cow Creek. The group also assisted with placing hatchery winter Steelhead into various areas in the Canyon Creek drainage.

### Small Woody Debris Placement

GRWB and Oregon Coastal Anglers (OCA) volunteers with the assistance of local students completed a small woody debris placement project. The materials for this program were obtained for free from the local community. These materials were used Christmas Trees that would have otherwise likely ended up being used for chips or being placed in a landfill. This project was designed enhance the habitat restoration project previously completed in Fitzpatrick Creek by ODFW, Bureau of Land Management (BLM), and Partnership for the Umpqua Rivers.

Volunteers from the Phoenix School and BLM conducted a similar project in Johnson Creek. Johnson Creek is located in the North Umpqua River basin on the BLM's North Bank Habitat Area.

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## **FISH CULTURE**

There are 6 salmon/steelhead/trout hatchery programs in the Umpqua and volunteers are involved in all of them. The program volunteers play the largest role in raising fall Chinook, Coho and winter Steelhead. The Umpqua Fisherman's Association (UFA) assisted with broodstock collection of Coho salmon and winter Steelhead as well as acclimating the Steelhead Gardiner Reedsport Winchester Bay (GRWB) STEP volunteers collected adult fall Chinook and reared Rainbow Trout.



*Photo 20: Volunteers raising fish.*

### Marking

Unfortunately with the loss of the entire group of fall Chinook in 2017, no marking was conducted for fall Chinook by volunteers. However, the group did mark approximately 3,500 Rainbow Trout for release into Lake Marie.

### Acclimation and Release

Winter steelhead acclimation and releases took place this past year at Canyon Creek and Seven Feather acclimation sites. These events not only contribute to winter steelhead angling opportunities in the basin but also provide a great educational experience for local students and adults. Approximately 90,000 winter steelhead were released in 2017.

The UFA assisted with acclimating and releasing Coho salmon below Galesville Dam. The Coho salmon program is a mitigation program initiated after the installation of the dam.

GRWB was unable to acclimate and fall Chinook due to the loss of the entire group.

High Lakes Stocking

The STEP program also coordinated the district’s High Lakes stocking using volunteers from Oregon Equestrian Trails. Volunteers stocked 6 lakes in the district with over 4,000 Rainbow Trout. Over 30 volunteers assisted with this year’s high lakes stocking.



Photo 21: Preparing to stock high lakes.

**Schools and Groups that work with Umpqua STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<b>Umpqua</b>	
<b>Elementary, Middle, and High Schools</b>	<b>Organizations</b>
Fullerton Elementary	Cow Creek Band of Umpqua Tribe of Indians
Hucrest Elementary	Gardiner Reedsport Winchester Bay STEP
Melrose Elementary	Umpqua Fisherman’s Association
St. Paul Lutheran	Oregon Equestrian Trails
Geneva Academy	Umpqua Fisheries Enhancement Derby
Winchester Elementary	Umpqua Guides Association
McGovern Elementary	Umpqua Valley Flyfishers
Glendale Elementary	Steamboaters
Canyonville Elementary	Diamond and Vets
Fremont Middle School	The Bowman Family
Eastwood Elementary	Florence STEP
Cobb School	Cabela’s
Tri-city Elementary	Sportsmans Warehouse
Riddle Elementary	Oregon Coast Anglers
Days Creek Elementary	<b>Government</b>
Glide Elementary	Bureau of Land Management
Glide Middle School	Lincoln County
Reedsport Elementary	Douglas County
Reedsport Charter	Oregon Parks and Recreation Department
Elkton Charter	United States Forest Service
<b>Colleges and Universities</b>	City of Roseburg
Oregon State University	Oregon State Police
Portland State University	NOAA
Umpqua Community College	U.S. Fish and Wildlife Service
<b>Watershed Councils</b>	
Partnership for the Umpqua Rivers	
Smith River Watershed Council	

## Tenmile, Coos, and Coquille STEP

Gary Vonderohe, STEP Biologist  
Antonio Salgado, STEP Biologist  
Chris Claire, Assistant District Fish 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 thirty 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, 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 of 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 before the program was formally established. Large numbers of volunteers continue to be involved in the area's extensive fish culture program that includes broodstock development, spawning, egg incubation, rearing, and acclimation projects.

## EDUCATION AND PROGRAM DEVELOPMENT

### Millicoma Interpretive Center

The Millicoma Interpretive Center (MIC) continues to be a popular place for student groups and the general public to come and learn more about the life histories of salmon and steelhead and habitat through "hand-on" activities. Groups are involved with the collection of broodstock, spawning, egg and fry care, fin-marking, measuring riparian habitat, and identifying stream habitat. Through these activities students learn the importance of habitat conservation. This forges a great connection between their activities at MIC, the life-cycle of salmon, and ecosystems.

### Coquille High School Educational Hatchery

The Coquille High School science teacher retired this past spring. Due to his upcoming retirement the teacher decided to not operate the Education Hatchery last year. A new teacher has been hired for the 2017-18 school year and is anxious to operate the Education Hatchery.

### Morgan Creek Hatchery

At Morgan Creek Hatchery over 1500 students learn the role the local salmon hatcheries play to enhance the fishery while having the chance to participate in hands-on activities that help them understand the benefits of a healthy ecosystem, salmon life cycle, and habitat conservation.

In the spring, students are given the opportunity to be a fish biologist, forester, habitat illustrator, and/or writer. Through these activities they learn the importance of collecting high quality data and understand the functions and connections of an ecosystem.

In the fall, fifth grade classes observe, learn, and participate in the entirety of the spawning process. Students form teams of five people and then rotate through five stations where they learn each step of the spawning protocol as well as leadership, teamwork, and engagement skills.



*Photo 22: Fin marking at Morgan Creek Hatchery.*

Several small projects continue at Morgan Creek Hatchery. These projects help maintain the hatchery and keep the operation running smoothly. Most of the signs and interpretive kiosks have been completed. These signs will help educate the ‘drop-in’ visitor.

A total of 567,769 Chinook salmon were marked at Morgan Creek during the report period. A total of 259,534 Chinook were marked by student groups and an additional 308,235 Chinook were marked by the auto mark trailer.

### Noble Creek Hatchery

New for 2016, 250 fifth graders from North Bend and Coos Bay schools came to Noble Creek Hatchery to help spawn hatchery Chinook salmon. The STEP biologist also taught these students about the salmon life cycle and the importance of quality fish habitat. Volunteers with Coos River STEP continued to use the deep matrix hatchboxes to incubate salmon at the hatchery until they are ready to be fed. Coos River STEP volunteers have continued to use the automatic fish feeders. These feeders automatically dispense fish food once an hour throughout the day. These feeders made a great improvement in the way we feed juvenile Chinook salmon at Noble Creek Hatchery. For the fourth year in a row the auto-fin marking trailer was at Noble Creek for two weeks to adipose clip 100% of the hatchery Chinook releases. Several members of the public came to see the trailer in operation. This was a great opportunity to talk to public about the importance of monitoring our hatchery releases.

### Family Fishing Events

Oregon Department of Fish and Wildlife hatcheries provided 2,000 legal rainbow trout for stocking in the vacant steelhead acclimation pond at Millicoma Interpretive Center. This has been a huge success with lots of children participating in the catching of these trout during late spring.

The annual Empire Lake Family Fun Day was held at the end of April in the city of Coos Bay. As part of the event 3,000 rainbow trout were stocked into the lake and participating children were given a free fishing pole equipped to catch the recently stocked trout. Lunch was provided to all participants by a local business. There were also many other family friendly activities available that day.



*Photo 23: First fish at event in Charleston.*

On Eel Lake, the STEP biologists and volunteers held a fishing clinic on Free Fishing Weekend for the sixteenth 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 volunteers for approximately one-month prior to the event. Volunteers with the Eel/Tenmile STEP Association rear 1,000 rainbow trout for a month in a net pen located in Eel Lake specifically for the clinic. About 250 children participated in this year's event at Eel Lake.

The STEP biologist worked with the Coos Bay and North Bend Fire Departments to facilitate the stocking of legal sized rainbow trout into portable fire suppression ponds for children to catch as part of two events. The first event was part of Coos Bay Fourth of July celebration at Mingus Park. The second event was part of the North Bend July Jubilee held in downtown North Bend. Ponds were also set up and operated by ODFW staff and volunteers as part of the annual Charleston Seafood Festival in early August. The Coos Bay Fire Fighters Association purchased a custom made fire pond for exclusive use at these fishing events.

#### Other Outreach

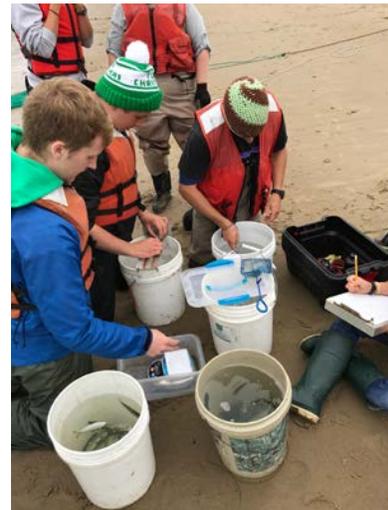
Since 2009, STEP has partnered with the Coquille Indian Tribe to operate a booth at the annual Salmon Celebration. The booth had a live adult Chinook salmon in a large aquarium.

## **INVENTORY AND MONITORING**

### 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.

With the number of juvenile Chinook salmon collected in the Coos Basin, the STEP Biologist has been estimating the total number of juvenile Chinook in the basin using a mark/recapture estimate. This monitoring begins in the spring and continues through the fall of the year. Volunteers in the STEP program play a key role with assistance conducting surveys for this long-term monitoring project.



*Photo 24: Oregon Institute of Marine Biology students measuring Chinook.*

## **HABITAT IMPROVEMENT**

### Carcass Placement

Salmon carcasses were again placed in numerous district streams during the report period. ODFW staff and volunteers placed over 4,300 salmonid carcasses into 5 different streams. These carcasses were from fish returning to Coos Basin STEP facilities.

## **FISH CULTURE**

Large numbers of volunteers continue to be involved in the extensive fish cultural programs in the District. There are five spawning, six egg incubation, four rearing, and fourteen acclimation projects in the District.

### 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.

### Fry Releases

The District STEP biologist coordinated the collection and distribution of salmon eggs from ODFW hatcheries or STEP incubation facilities to volunteers. As a result, 63,829 fry were released from two hatchboxes in the Coquille Basin. 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.

### Pre-Smolt Releases

Large numbers of Chinook salmon pre-smolts 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. Spawning habitat in the Coos began to be compromised in 1887 when the practice of splash-damming rivers started.

Splash-damming was a process by which logging companies ran logs down the rivers during freshet events with the use of a large dam that was removed at a designated time. Prior to running logs down the river, logs and rocks that provided critical stream habitat were removed. This activity removed the river gravel that Chinook salmon needed for spawning.



*Photo 25: Acclimation of presmolts in Pony Slough.*

The Chinook salmon pre-smolt program in the Coos addresses the limited spawning habitat by producing large numbers of juveniles to utilize the Coos estuary. Coastal fall Chinook salmon rear almost extensively in coastal estuaries and the Coos estuary is the largest in Oregon. A total of 2,102,158 Chinook salmon pre-smolts were released into the Coos Basin in the spring of 2017. Almost all of the Chinook that were released in the Coos River basin in the spring of 2017 were fin clipped. The addition of the auto mark trailer was a significant help in achieving the near 100% fin marking rate. The auto mark trailer marked all the Chinook at Noble Creek and 54% of the Chinook marked at Morgan Creek. Student groups at Morgan Creek marked the balance of the Chinook reared at that facility.

Since 2007, Chinook salmon have been released into the Fourth Creek reservoir as part of a cooperative partnership with the Coquille Indian Tribe. The fish are reared at Bandon Hatchery and acclimated in an alcove of the reservoir. A blocking weir was constructed to prevent the juvenile Chinook salmon from entering the reservoir proper. The acclimation this year was a success. The fish held and fed well in the rearing area then left the reservoir in a timely manner.

In the fall of 2012, a trap was constructed and installed into the fishway at the tribal reservoir. Again this past year, no salmon were trapped last fall.

### Fish Eggs-to-Fry Program

A total of ten classroom incubators were operated at nine different schools. This past year hundreds of students at nine schools observed eggs hatch and develop. At the time the eggs are

distributed, the students are presented with a lesson by the STEP biologist on the biology of salmon eggs and salmon in general. This lesson further imparts resource ownership to the children.

Rearing and Acclimation

In 2017, over 10,000 Chinook salmon presmolts were released from the Coquille High School. These fish were reared at Bandon Hatchery and then transferred to the high school.

Approximately 85,000 fall Chinook salmon smolts were released from two locations in the Coquille River basin. The two acclimation sites are Sevenmile Creek and Ferry Creek. These acclimations was extremely successful this year in that the fish held and fed well during their acclimation period. The acclimation of a larger number of Chinook smolts at Ferry Creek should provide a good source of broodstock when they are trapped at Bandon Hatchery which is located just upstream from the acclimation site.

STEP volunteers operated a total of nineteen 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.

**Schools and Groups that work with Tenmile Coos Coquille STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b>          Bandon High School          Blossom Gulch Elementary School          Coos Bay School District          Coquille High School          Harbor Middle School          Hillcrest Elementary School          Lighthouse School          Lincoln Elementary School          Madison Elementary School          Marshfield High School          Millicoma Mid. School          Myrtlecrest Elementary School          North Bay Elementary School          North Bend High School          North Bend Middle School</p>	<p>Powers Elementary School          Sunset Middle School  <b>Colleges and Universities</b>          Central Oregon Community College          Southwestern Oregon Community College          Oregon Institute of Marine Biology  <b>Organizations</b>          Bay Area Sportsman Association          Boy Scouts of America          Coos River STEP          Coos County STEP          Coquille River STEP          Eel Tenmile STEP          South Coast Anglers STEP</p>
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## Lower Rogue STEP

John Weber, STEP Biologist  
Steve Mazur, Assistant District Fish Biologist  
Vacant, District Fish Biologist

The Lower Rogue Watershed District is part of the Rogue Watershed District. The Lower Rogue Watershed District includes coastal basins from Four Mile Creek south to the California border. New River, Elk and Sixes Rivers, Euchre Creek, Rogue 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 activities in this watershed district belong to one of two local STEP groups: Oregon South Coast Fisherman (OSCF) or Curry Anadromous Fishermen (CAF).

The groups consist primarily of retired individuals interested in performing meaningful work that will help restore and maintain fish populations within local watersheds.

The CAF's primary focus is aquaculture and education while the OSCF's focus is 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. In 2013 the Oregon Fish and Wildlife Commission adopted the Rogue Fall Chinook Species Management Unit (SMU) Conservation Plan. The plan sets conservation criteria and desired status goals for wild fall Chinook salmon in the Rogue River and five coastal watersheds south of Elk River. The plan was developed by ODFW in collaboration with multiple government agencies and a public advisory committee. The two district STEP groups provided representatives for the advisory committee. In addition, the majority of the monitoring projects that STEP volunteers participate in (in the Lower Rogue Watershed District) are defined management strategies embedded in the plan. The culmination of the plan has focused the STEP groups on fishery management in the District.

Volunteers participated in projects associated with fish culture, education of youth, habitat restoration, and population monitoring. Fish culture and population monitoring comprise the majority of volunteer effort.

## EDUCATION AND PROGRAM DEVELOPMENT

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.

The Lower Rogue STEP biologist made 33 presentations at organized fishing group meetings. Primary topics discussed were fish management policy, habitat problems and solutions, angling regulations, STEP guidelines, district management objectives, and volunteer recruitment.

A total of 35 presentations were made to students at local schools. Topics included: Salmonid life history, fish anatomy, fish culture, angling, habitat protection, and restoration. Some of the presentations involved a field trip relative to the topics discussed.

### Lower Rogue Native American Heritage Camp

The STEP biologist with the help of OSCF and CAF joined with Wil Warren of "I'm Hooked" to provide angler education for the Lower Rogue Native American Heritage Camp. Students that attended the camp spent the afternoon at stations that focused on angling techniques, gear and

native fish of the Rogue River. In addition, all the campers had the opportunity to fish with Wil on the river and received a free fishing pole at the end of the day.

### Azalea Festival

The Oregon South Coast Fisherman and STEP biologist conducted the annual portable fishing ponds at the Brookings Azalea Festival. The group has hosted the fishing event since 1989. Approximately 110 children participated this year. The event includes displays of various ongoing STEP projects which creates a great atmosphere to recruit young anglers and volunteers.

### Free Fishing Day

On June 3, 2017 the annual free fishing day event was held at Libby Pond. Ninety kids registered for the event organized by ODFW. Volunteers from CAF and OSCF sponsored the derby and were on hand to register children. Participants caught over 100 rainbow trout during the derby.

On June 4, 2017 the 1<sup>st</sup> annual free fishing day at Arizona Pond was a success. Volunteers from Port Orford Rotary sponsored the event. This will be an annual event at Arizona Pond.

Throughout both events kids were assisted with fishing tips, instruction, registration and measurement of trout. Hot dogs and beverages for the events were provided by volunteers. In addition fishing rods and equipment were donated to be given away in a raffle.

### Improved South Coast Angler Access

Oregon South Coast Fisherman maintained an access agreement with a Chetco River front landowner. The area has been a popular access point for local area anglers for many years. Beginning in 2001, OSCF has been involved with the cleaning and maintenance of the area. This opportunity may not have been possible without the OSCF's positive history working with the landowner. The gate will be opened during fishing season for access.

Curry Citizen for Public Land Access (CCPLA) and Lower Rogue STEP volunteers maintained multiple fishing access areas throughout the Lower Rogue District. The primary project for 2017 was deepening the Arizona Beach youth angling pond. CCPLA volunteers provided equipment and time to prepare a site for spoils removed the pond. CAF and OSCF volunteers removed vegetation from around the site. A grant from Restoration and Enhancement Program was used to fund the removal. CAF and OSCF provided in-kind funding and volunteer support.

### Reel Fish Day

The Lower Rogue STEP, Oregon Parks and Recreation Department, and the South Coast Watershed Council office sponsored Reel Fish Day, an angler education day for Brookings and Gold Beach Elementary School third grade classes. This event was held at Arizona Beach State Park and is designed to complement the STEP Fish Eggs-to-Fry program that has been offered over the last two decades. In 2017, all of the third grade classes in the Lower Rogue STEP district attended the event. Volunteers taught casting, line tying, and hook baiting. An aquatic education curriculum was presented once the core skills of angling were taught. Youth fished with assistance from Angler Education instructors in the pond which was stocked with trout prior to the event. Participants were given the option to keep or release their fish.

Those that chose to retain their catch were taught the responsibility of packaging and cleaning their fish for a meal. With the success of Reel Fish Day the Brookings, Port Orford, and Gold Beach School Districts will continue to send their third grade classes to this event.

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## **INVENTORY AND MONITORING**

### Chetco Scale Sampling

The STEP biologist and Oregon South Coast Fishermen volunteers assisted in a fall Chinook salmon scale sampling effort conducted on the Chetco River. The sampling effort is planned to improve data on age and hatchery/wild composition estimates for the Chetco River. The volunteers used drift boats and covered the mainstem reaches while ODFW sampled in the tributaries. During the 2016 brood year volunteers and staff collected over 150 samples.

### Estuary Seining

The STEP biologist and OSCF volunteers completed their 26th year seining Chinook salmon smolts in the Chetco River estuary. The project consists of volunteers setting a juvenile beach seine at select stations bi-weekly from June through September. These index surveys characterize abundance and development of native fall Chinook salmon smolt. In addition, the data is used to indicate when hatchery Chinook salmon smolt should be released to have the least impact on native fish utilizing the estuary.

### Winchuck River Screw Trap

The STEP biologist and OSCF volunteers operated a downstream migrant trap just upstream of the Winchuck River estuary. Operation of the trap represents the continuation of a 28-year database. The OSCF have operated the trap for the past fourteen fifteen years, doing work that would otherwise be unaccomplished under current district staffing levels. The data obtained from the trap is used by ODFW to assist in managing fall Chinook salmon.

The 2017 Winchuck trapping season concluded with 67 days of trap operation and an estimated 90,374 fall Chinook salmon migrated past the smolt trap site.

### Huntley Park Seining

The Huntley Park Seining Project represents a continuation of a 42-year adult salmonid monitoring database. This project is conducted annually from July through October at Huntley Park on the lower Rogue River. The Huntley project is a high priority to the district and harvest managers. The Huntley Park data is used to monitor stock abundance, age composition and hatchery/wild ratio of summer Steelhead, Coho salmon, and fall Chinook salmon.

Later in the season, wild fall Chinook salmon broodstock are collected for the Indian Creek Hatchery STEP facility.

A number of STEP and local volunteers participate every year, rain or shine.

### Chetco Snout Recovery Stations

During the fall two snout recovery stations were deployed to several Chetco River boat ramps. Volunteers solicited prizes for raffle to anglers that donated tagged snouts. Each station has cards for anglers to fill out to include with the snout. If the card is filled out correctly and the snout has a tag the angler will be entered into drawings that will be conducted throughout the 2017 season.

### Indian Creek Hatchery Monitoring

In an effort to better evaluate the Indian Creek Hatchery program, volunteers walked spawning ground surveys on Indian Creek. The data from this effort will be used to determine the effectiveness of the adult fish trap and to estimate the number of fish using Indian Creek.

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## **HABITAT IMPROVEMENT**

### Stream Enrichment

Volunteers with the Curry Anadromous Fishermen and the Oregon South Coast Fishermen assisted ODFW with placement of fall Chinook salmon carcasses. A total of 1,845 fall Chinook salmon carcasses from Elk River Hatchery and Indian Creek STEP Hatchery were distributed in the Chetco River, Euchre and Brush Creeks and lower Rogue River tributaries. In addition, steelhead carcasses of Chetco River origin were redistributed into the south fork of the Chetco River.

### Estuary Riparian Enhancement

Oregon Stewardship with help from Curry Anadromous Fisherman and local students improved estuary riparian habitat along Euchre, Hunter Creek, Pistol, and Winchuck rivers to improve Chinook salmon production. Oregon Stewardship contacted the landowners of the estuaries for access and planting on their property. Students from Brookings and Gold Beach schools planted willow and spruce trees in early spring of 2017 and followed up with watering and weeding. Reports indicate good growth and excellent survival of last year's plantings. This is an annual project that is difficult to achieve without the leadership of Oregon Stewardship.

### Chetco River Fish Salvage

Oregon South Coast Fishermen volunteers spent five days salvaging stranded Chetco River fall Chinook salmon juveniles from off-channel pools. Volunteers located pools that were no longer connected to the river and that had a high risk of dewatering over the summer months. The majority of the fish salvaged were Chinook salmon, some juvenile winter steelhead was observed in the catch.

### Salmon Run Golf Course Riparian Rehabilitation

Students with the Kalmiopsis grade school and OSCF spent numerous days removing invasive plants and replanting the riparian on Jack Creek a tributary of the Chetco River. In an effort to improve the quality of the riparian vegetation on Jack Creek the OSCF, Southcoast Watershed Council and Salmon Run Golf Course have collaborated with the school to remove Himalayan blackberries. The plan is to replant with native vegetation that better suit the fairways on the golf course. This is an annual effort with expectations to continue.

### Port of Brookings Aerators

Historic water samples of the Chetco Boat basin identified areas of low dissolved oxygen. At the time OSCF obtained funding from various sources to purchase and maintain the aerators. Last summer the Port of Brookings and OSCF purchased equipment required for maintenance. With the funding the OSCF assisted the Port in getting the equipment back online.

### Jack Creek Water Quality

Students and volunteers worked together to gather samples to determine water quality in Jack Creek a tributary of the Chetco River. Data collected included water temperature, PH and dissolved oxygen. In addition, Curry Soil and Water Conservation and OSCF volunteers placed multiple thermographs in a reservoir on Jack Creek to determine if the waterbody is suitable for future trout stocking.

## FISH CULTURE

### Chetco River Broodstock Collection

Volunteers and fishing guides assisted ODFW staff in collecting broodstock for the Chetco River hatchery programs. Chinook and steelhead were collected and transported to Elk River Hatchery.

### Ferry Creek Acclimation

ODFW and OSCF acclimated fall Chinook in Ferry Creek Reservoir. Fall Chinook salmon were acclimated at the Ferry Creek Reservoir which is an unused water source for the City of Brookings that flows into Ferry Creek. Volunteers reared two groups of 13,500 fall Chinook salmon smolts. The goals of the acclimation project: 1) Increase harvest opportunity by increasing the length of time the returning adults hold in the Chetco estuary, and 2) reduce the proportion of naturally spawning hatchery fish in the wild population.

### Indian Creek STEP Hatchery (Lower Rogue)

Wild Lower Rogue fall Chinook salmon broodstock are collected, transported, and spawned at the Indian Creek Hatchery STEP facility. The resulting offspring are incorporated into a smolt program for supplementation of Lower Rogue Chinook salmon stock. A total of 40,256 fall Chinook salmon were marked and reared to smolts by volunteers. The full sized smolts were released into the Rogue River estuary in the late summer. Below average adult returns during BY 2016 resulted in a reduction of smolt reared/released from the facility. The reduction in smolt reared in turn reduced the number of hours volunteered at the facility. In addition, 28,180 of the smolt production were marked and coded wire tagged.

### Euchre Creek Hatchbox

Reduced production at the Indian Creek Hatchery resulted in no excess eggs to operate the Euchre Creek hatchbox.

## Schools and Groups that work with Lower Rogue STEP

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<b>Lower Rogue</b>	
<b>Elementary, Middle, and High Schools</b>	Curry Citizens for Public Land Access (CCPLA)
Azalea Middle School	I'm Hooked Inc.
Brookings Harbor Christian School	Oregon Stewardship
Brookings Harbor High School	KBSC
Driftwood School (Port Orford)	KURY
Gold Beach High School	<b>Government</b>
Kalmiopsis Elementary School	City of Brookings
Klamath Outdoor Science School	Curry County
Pacific High School (Port Orford)	Port of Brookings
Riley Creek School K-12 (Gold Beach)	Port of Gold Beach
<b>Organizations</b>	<b>Watershed Councils</b>
Curry Anadromous Fishermen (CAF)	Lower Rogue Watershed Council
Curry Sportfishing	Port Orford Ocean Resource Team (POORT)
Oregon South Coast Fisherman (OSCF)	South Coast Watershed Council

## Upper Rogue STEP

Ryan Battleson, STEP Biologist  
Dan Van Dyke, District Fish Biologist

The Upper Rogue STEP district includes most of the Rogue watershed, extending from the headwaters near Crater Lake downstream to Mule Creek near the community of Agness. Primary tributaries include Big Butte Creek, Little Butte Creek, Elk Creek, Bear Creek, Evans Creek, Grave Creek, the Applegate River and the Illinois River. The Rogue watershed has the largest human population of any coastal watershed in Oregon. Approximately 400,000 people live in the district, posing challenges for fish and wildlife resources but also providing a large number of schools, service clubs, sportsman's clubs, and volunteers to assist in various STEP projects that educate citizens and improve fish habitat throughout the basin.

The diversity of fish species native to the Rogue is narrow, but the river has and continues to produce large numbers of salmon and steelhead. One species, the Coho salmon, is listed as "Threatened" under the Federal Endangered Species Act.

This year 466 district STEP volunteers put in over 2,400 hours and donated over 2,200 miles to complete the various projects described in this report to help meet district management objectives. Monitoring projects, outreach and habitat work make up the bulk of the volunteer projects on the Rogue. An emphasis on small streams, urban streams and intermittent streams outreach, small scale restoration, and monitoring activities make up the majority of STEP activities. This focus is intended to highlight fish use in streams that are often overlooked by agencies and the general public and encourage good stewardship among streamside landowners and cost-effective restoration projects.

The STEP Biologist attended a number of new public speaking outreach opportunities and festivals. This diverse range of folks included events attended by traditional angler groups, to local landowners and agriculture producers, and a few evening speaker series events open to the general public. A new acclimation project near the city of Grants Pass, intended to maximize harvest of hatchery fish from an existing propagation program completed its second year; This year at 2 new locations.

## EDUCATION AND PROGRAM DEVELOPMENT

### Fish Eggs to Fry Program: Classroom incubators

In the Upper Rogue District, the Fish Eggs to Fry Program focuses on raising spring Chinook from the eyed eggs stage to button up fry. STEP Volunteers from the local angling groups and public deliver the eggs to the classrooms. A total of 30 teachers participated in the program during the fall of 2015. Five of these were at brand new schools. In most cases a curriculum developed by STEP biologists was used to promote learning about egg development, salmonid life-cycles and fish habitat requirements. A popular nature center in Ashland participated this year, and served as an additional outreach opportunity to introduce the public to salmon life history. The Grants Pass area Bureau of Land Management Office, a high traffic office used for issuing Rogue River recreational float permits, also operated a Fish Eggs to Fry aquarium with Spring Chinook. Both of these latter two locations purchased all of their equipment so that state purchased equipment could be used for classrooms. The District STEP Biologist also solicited angling groups to purchase additional aquariums/chiller units to be used in the fall of 2017. These numbers will be reflected in the 2017/2018 report. Being one of the flagship educational programs offered through ODFW, an increase in school site participation is a top priority to the Upper Rogue District. It will act as a spring board for so many other programs such as Salmon

Watch, Stream Scene, the Small Stream, Urban Stream, and Intermittent Stream Program, and Angler Education in the Rogue Valley.

### Small Stream, Urban Stream, Intermittent Stream Projects

The Small Stream, Urban Stream, Intermittent Stream Project of monitoring and outreach continued to be a focal point of the STEP program in the Rogue Valley. This effort is aimed at the following: creating awareness of the fish resources using these streams, in order to promote stewardship and protect habitat; gaining additional fish distribution information; and developing interest and support for restoration actions on individual streams.

Key to the project, volunteers operate upstream migrant “hoop” traps to survey for fish use during winter. A total of 37 streams have been sampled with “hoop” traps since the start of the project in 2005. This year upstream migrant hoop traps were operated on Larson Creek (Medford), Tolman Creek (Ashland), and Bitterlick Creek (Eagle Point). The trap data and restoration opportunities are communicated to the public through a variety of techniques. The Upper Rogue District STEP Biologist coordinates all aspects of the project: identifying sites; maintaining hoop traps; recruiting and training volunteers; writing brief summaries of survey results; and working to publicize the results within the community.

This year sampling efforts from on small streams within the urbanized Bear Creek drainage found juvenile pacific lamprey ammocoetes. The STEP Biologist hosted the local newspaper columnist who wrote an informative front page article bringing awareness to a little known anadromous species of the Rogue. The newspaper title was “Parasites of the Pacific” and the online version video and article were titled “Where do eel-like lamprey lurk?” and it was published on 8/9/2017. It can be found at the link below:

<http://www.mailtribune.com/news/20170809/where-do-eel-like-lamprey-lurk>

A riparian project on a small, unnamed tributary to Bear Creek is equal parts habitat restoration and outreach. The creek flows through a culvert on the Bear Creek Greenway in Phoenix, Oregon (see photo below). The 2016-2017 period marked the second year of restoration and outreach for this small, seemingly innocuous stream and was the site for a hoop trap from fall through spring. The high school biology teacher paired with the STEP biologist to host 2 field trips to the site in the winter and spring of 2017. One for a restoration field day and the other as an ecology field day. This working lab gave the students a chance to learn about techniques such as mark recapture population estimates and Chinook salmon and Steelhead ecology in the Bear Creek basin. The students also participated in the ongoing restoration by removing noxious weeds and planting native trees. A sign on the greenway encourages members of the public to contact the local STEP biologist for more information.



*Photo 26: Display tank at the annual Salmon Festival at Ashland's North Mountain Park Nature Center. Participants are exposed to native fish such as adult and juvenile Chinook salmon and Steelhead, Cutthroat, Sculpin, and Speckled Dace.*

### Bear Creek Salmon Festival at North Mountain Park, Ashland

A booth at the annual Bear Creek Salmon Festival was staffed by the STEP biologist again this year. On display were juvenile steelhead, sculpin, and exotic shiners and crayfish collected from Bear Creek at the park. Several of the attendees at the festival saw fall Chinook salmon about to

spawn in Bear Creek on the park grounds. Creek stewardship and local areas for families to fish was emphasized in the display material. Additionally, Angler Education instructors from the Middle Rogue Steelheaders participated in casting, knot tying, and angler ethics demonstrations.

### Creeks and Kids 2016

The ODFW portion of the event was planned around showcasing wild fall Chinook spawning in Bear Creek. This event was cancelled at last minute due to inclement weather, but a volunteer had still helped gather materials for the event. This event is usually a great opportunity to emphasize the importance of Bear Creek to native salmonids, despite being the Rogue River's most urbanized stream.

### Salmon Watch

In the Rogue Valley, Salmon Watch is a total volunteer run program and organized locally by non-government organizations. This year, the STEP Biologist assisted in training of volunteers for this program, as well as led 3 events. Each event has 4 stations consisting of Salmon Biology, Water Quality, Macroinvertebrates, and a Riparian Walk. This was the first year in many that the STEP program participated in Salmon Watch.

### August Institute Educators Resource Fair

A workshop for teachers organized by The August Institute, was held at the Science Works museum in Ashland in August 2017. Approximately 30 local educators attended the event. STEP highlighted the educational resources available to teachers and students including the Fish Eggs to Fry program and Stream Scene. Additionally, live juvenile steelhead, sculpin, and shiner were on display. This event resulted in several new teachers signing up for the Fish Eggs to Fry program.



*Photo 27: A Southern Oregon University student and STEP Volunteer, assisted with the August Institute Resource Fair highlighting resources for educators including the Fish Eggs to Fry Program and Stream Scene.*

### Family Fishing Day at Reinhart Park Pond and Free Fishing Weekend at Lake Selmac

Consistent with the 25 year Angling Enhancement Plan, STEP organized two family fishing events during the reporting period. Members of the Crater Bass angling group paired with STEP to provide fishing rods and assist in baiting hooks at Reinhart Volunteer Community Park and Pond in Grants Pass. This coincided with a recent legal and trophy trout stocking. STEP Volunteers from the Middle Rogue Steelheaders organized the annual free fishing weekend event at Lake Selmac in Selma, OR. In addition to rods, bait, and instruction being provided to participants, a barbeque and raffle topped off the event. A good ratio of volunteers to participants, and the STEP Biologist on hand provided for a hands on "guided" experience. Several young anglers were lucky enough to catch their first fish at both of these events.

### Large Group Presentations

Part of regular duties, the STEP Biologist attended monthly meetings of local angling groups including the Rogue Flyfishers, Southern Oregon Flyfishers, and Middle Rogue Steelheaders.

Attendance at these meetings also included run downs of current District happenings as well as an opportunity for public comment and questions.

In 2016/2017 the STEP Biologist gave two featured presentations to the Middle Rogue Steelheaders, a local angling and conservation/restoration group. One presentation was a brief overview of Rogue River history, highlighting current hatchery programs in the Rogue and stock status of wild fish. The other presentation was about how ocean conditions impact anadromous fishery stocks. Each presentation was about an hour with combined presentation, questions and discussion.

Apart from the typical angling group presentations, the STEP Biologist was a feature speaker at two evening events sponsored by local businesses and the Rogue Riverkeeper conservation group. One was entitled “Clean Water Equals Good Business”. Here the economic impacts of fishing and wildlife viewing were discussed in the context of anadromous Rogue fish stocks and their habitat requirements. The second presentation was entitled “Wonders of the Rogue”, where the history, fisheries, and their habitat requirements and current status were highlighted. Both events emphasized stewardship as well as the importance of salmon and steelhead to our local areas, both ecologically and socially.

#### Interpretive Signage

The STEP Biologists assisted and advised interpretive rangers at the MacGregor Park Visitor Center, and joint BLM and US Army Corps facility in developing interpretive signage related to Rogue specific native fish, their habitat needs and ecology, life cycles, and economic and social impacts.

### **INVENTORY AND MONITORING**

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In 2005, ODFW implemented a program of increased monitoring and outreach on small streams, urban streams, and intermittent streams of the Rogue Watershed. A key component is surveying for the relative abundance of salmon and trout using these streams during winter high flow periods. The information is collected to inform the public about the importance of these small streams as refuge for salmonids during winter storms. Volunteers were recruited through ODFW’s STEP and trained to monitor and identify fish species captured in the traps throughout the winter. To date 37 streams have been sampled. Since its inception, the project has been a useful tool in finding out where fish go during high flow periods, increased our knowledge of the distribution of threatened Coho salmon. Also, many fish passage barriers and habitat improvement projects have been identified throughout the Rogue District.

#### Hoop Traps

In fall-early spring 2016-2017, 3 volunteers spent 110 hours sampling hoop traps in the Rogue Watershed. Hoop traps were placed in tributaries of Bear Creek: Larson Creek and Tolman Creek. Tolman Creek caught only 10 juvenile steelhead over 33 trap nights. Larson Creek hoop trap disappointingly captured only 5 juvenile steelhead over 179 trap nights. Bitterlick Creek, a tributary to Little Butte Creek and the Rogue River in Eagle Point was also trapped to evaluate impacts of a culvert near its confluence with Little Butte Creek. With no juvenile steelhead, cutthroat, or Coho being captured, this culvert appears to be a partial barrier to juvenile fish. Results were distributed to local streamside landowners along with notes on salmonid biology and the importance of streamside stewardship for small streams.

Out-migrant fry and irrigation ditch bypass trapping:

**Murphy Creek Bypass Trap:** Murphy Creek is an example of a stream that becomes intermittent to dry on most years due to irrigation withdrawal. Here, the Murphy Ditch Irrigation Canal dries up 1.5 miles of stream. A bypass trap is operated beginning April 1-October 31 of every year. When the creek begins drying up, STEP volunteers trap and haul these juvenile salmonids and other native fish downstream to the mainstem Applegate River.

**Jones Creek Downstream Traps:** The Jones Creek fry trapping project began as way to keep Steelhead fry from entering an irrigation canal in Grants Pass through an unscreened diversion. STEP volunteers were trained to operate the traps and move fish safely downstream. Following the completion of several fish passage projects and the removal of the unscreened diversion (work completed by the Stream Restoration Alliance), the traps have been used since 2014 for partial evaluation of the projects.

During the spring of 2017, a total of 12 STEP volunteers contributed 318 hours to trap mostly juvenile summer steelhead fry in both the West and East Fork of Jones Creek. A total of 17 fry were counted in the East Fork in 63 trap nights. On the West Fork, 157 fry were collected in 54 trap nights. The lack of fry this year was certainly a concern with the volunteers but presence of 21 larger (100mm-200mm) cutthroat and steelhead parr was considered good news and anecdotal evidence that recent passage improvements have been benefitting yearling salmonids. In the past, low flows would surely have blocked yearling steelhead, Coho, and cutthroat from reaching the habitat available in the west and east forks of the creek when winter rains re-wet the channels. STEP volunteers continue to play a role in this important project.

**Caris and Miller Creek Trap and Haul:** Caris and Miller Creeks are both creeks that are bisected by an irrigation canal during peak outmigration timing for summer steelhead. Both creeks have passage issues at their mouths and entrainment potential for fish should they enter irrigation canals. This year marked the first efforts to monitor and quantify impacts that these canal crossings pose.

Volunteers operated downstream migrant traps from 5/4/2017 through 7/19/2017, a total of 79 trap nights. Species captured included juvenile trout fry, yearling Steelhead, non-native crayfish (*Orconectes neglectus*), non-native Redside Shiner, Pumpkinseed Sunfish, Pacific Giant Salamander, and non-native bullfrogs. The presence of adult Pacific Lamprey in both of the upstream migrant traps was a surprise and expands species distribution into these creeks.

On Caris Creek, 9 trout fry and 1 yearling Steelhead were captured. The catch was dominated by exotic Redside Shiner (n=39), Pumpkinseed Sunfish (n=1) and Ringed Crayfish (n=2). This creek is a summer Steelhead stream, and will continue to be monitored and considered for volunteer habitat improvements and outreach.

On Miller Creek, 2 trout fry and 4 yearling Steelhead were captured. Other species in the catch included Ringed Crayfish (n=2), Redside Shiner (n=4), Pacific Giant Salamander (n=1), 3 adult Pacific Lampreys, and Bullfrog (n=3).

**Birdseye Creek Outmigrant Monitoring and fish distribution monitoring:** Birdseye Creek is another tributary to the Rogue River, similar to Jones Creek that is a major summer Steelhead spawning tributary. In the 1970's, Fred Everest, an ODFW Biologist, identified major spawning tributaries for summer steelhead in the Rogue Basin, most of these occurring near the Gold Hill and Rogue River areas of the Rogue Valley. Summer steelhead are a species that have been most impacted by habitat loss and water withdrawals with increasing urbanization of the Rogue Valley. Birdseye creek is located near Gold Hill. Most years it is a perennial stream, but reports are that it goes interstitial in some reaches, especially during the past drought years of 2013-

2015. This year the Middle Rogue Steelheaders approached STEP wanting to adopt a larger Steelhead spawning tributary for distribution, monitoring and habitat improvement projects. The Upper Rogue District has been interested in increased monitoring of these Summer Steelhead tributaries of the Rogue. Volunteers were able to accompany the STEP Biologist during a fish presence electroshocking survey and expanded cutthroat distribution on Russian Gulch, a tributary stream to Left Fork Birdseye that had previously been deemed fishless.

Ten different Volunteers from the Middle Rogue Steelheaders and Southern Oregon Flyfishers operated a downstream migrant hoop trap from 6/28/2017 through 8/22/2017, 55 trap nights, and captured 1280 trout fry. The trap catch also consisted of sculpin (n=179), Speckled Dace (n=25), Signal Crayfish (n=4), non-native Ringed Crayfish (n=1), and non-native Umpqua Pikeminnow (n=2). Trapping will start earlier in the year next year and likely expand to other summer steelhead tributaries in the Gold Hill area.

## HABITAT IMPROVEMENT

### Riparian Restoration

**Whetstone Creek:** Work continued on a multi-year project to restore riparian vegetation along Whetstone Creek where it flows through the Denman Wildlife Area (roughly 4,500 feet of stream). Volunteers from the Middle Rogue Steelheaders spent a day planting over 500 willow cuttings, and fencing numerous establishing hardwood trees to limit beaver damage. Volunteers assisted with the watering of plants twice per week from April through September.

**Unnamed tributary to Bear Creek in Phoenix:** A small unnamed tributary at Blue Heron Park began its third year of restoration and outreach during the 2016-2017 reporting year. This project, as noted earlier is along the Bear Creek Greenway in Phoenix and serves as a very public outreach showing the importance of small streams within the Rogue Basin. Additional Blue Elderberry, Ponderosa Pines, Cotton Wood, Incense Cedar, and willow cuttings were planted at this site. Follow up hand removal of Himalayan Blackberry, Poison Hemlock, and Star Thistle were also removed. Volunteers, including Phoenix High School Students participated in restoration at this site throughout the spring of 2016. The project area is about 200 feet long by 100 feet wide, or about 0.45 acres of the riparian area.



*Photo 28: Phoenix High School students pull blackberries, and plant native trees along a tributary of Bear Creek in Phoenix's Blue Heron Park.*

**Gilbert Creek:** In an effort to expand restoration opportunities to other streams and communities within the Rogue Basin, the STEP biologist began the process of advising the local Grants Pass High School and Rogue Watershed Council in a multi-year, multi-partner restoration project on Gilbert Creek. This project is led and implemented by the Rogue River Watershed Council, who received a nearly \$10,000 grant over 2 years from the Oregon Watershed Enhancement Board. The STEP Biologist helped with the technical advising of the project as in-kind matching funds, and has coordinated local STEP volunteers from the Middle Rogue Steelheaders, Southern Oregon Flyfishers, and Grants Pass High School to assist in implementing the project. This project pairs a number of partners together, most importantly the local Grants Pass High School, North Middle School, and Highland Elementary School classes and grounds which have Creekside frontage property to Gilbert Creek. The site located in the heart of Grants Pass will serve as a focal point for what a healthy urban stream can look like.

This year 121 youth and 30 adults helped to hand clear over 500 linear feet of Himalayan Blackberry and replanted with Red Osier Dogwood, Snowberry, *Juncus spp.*, Oregon Ash, Ponderosa Pine, Big Leaf Maple, and approximately 500 willow (*Salix spp.*) stakes.

**Thompson Creek:** Thompson creek is a tributary stream to Deer Creek within the Illinois River Basin, near Selma, Oregon. This year, a local non-profit restoration organization called Oregon Stewardship began working on a stretch of Thompson Creek owned by Josephine County. Oregon Stewardship works with local high school students throughout Curry, Jackson, and Josephine counties of Southwestern Oregon. This reach of Thompson Creek goes completely interstitial/subsurface beginning in late April to Early May. The Upper Rogue STEP Biologist helped in identifying land ownership and putting Oregon Stewardship in contact with land owners for gaining access to the property. At this point, Oregon Ash, Ponderosa Pine, Red Osier Dogwood were planted on the banks of this creek reach. Willow stakes were propagated by Oregon Stewardship and planted on many of the sluffing banks of Thompson Creek within this reach. The goal is to get a riparian canopy established where there currently is very little to none.

**Lost Creek Reservoir bank habitat enhancement:** Members of Crater Bass helped to propagate, plant, and water willow stakes in the drawdown zone of Lost Creek Reservoir. These areas are typically void of vegetation. These improvements are expected to improve lake water quality and provide refuge for game fish including trout and bass. Volunteers also built spider block habitat structures and placed them in shoaling areas for warm water fishery improvements. David Haight, assistant district biologist in the Upper Rogue District led these activities and all structures were purchased by Crater Bass.

#### Stream Nutrient Enrichment

52 volunteers contributed 235 hours to carcass placement in streams for nutrient enrichment in 2016/2017. Members from the Coastal Conservation Alliance, Southern Oregon Flyfishers, Southern Oregon University Biology Club, and Rogue River Watershed Council, again paired with the STEP program to distribute carcasses generated from returns to Cole Rivers Hatchery of Spring Chinook, Coho, summer and winter Steelhead in the upper Rogue Basin. These 52 volunteers, during 7 events, contributed 235 hours of labor for this activities. A total of 19,964 pounds of spring Chinook salmon were distributed in the mainstem Rogue River between Cole Rivers Hatchery and Shady Cove by drift boat. A total of 4,186 pounds of Coho salmon were distributed in tributaries of Elk Creek, including Alco, W. Fork, and Bitter Lick Creeks. A total of 4,116 pounds of summer and winter Steelhead were distributed in Sugarpine Creek, Flat Creek, and North Fork of Butte Creek. All tributary streams are streams designated as high density Coho and Steelhead bearing streams. All Carcasses were frozen for a period of 21 days at minus 10 degrees Fahrenheit to kill the pathogen that causes canine salmon poisoning in order to reduce any potential conflict with streamside landowners and their pets.

#### Temporary fish passage improvement at Sand Creek irrigation diversion

A concrete irrigation diversion on Sand Creek in Grants Pass was found to block migration of juvenile steelhead during hoop trapping surveys conducted by STEP volunteers in recent years. In 2015, Volunteers installed metal trusses and dam boards, under guidance of the Southwestern Fish Screening and Passage Office, and the local STEP biologist, to create a jump pool to improve conditions for passage of juvenile and adult steelhead. With the hoop trapping records and New Year's fish count, and even electroshocking surveys yielding few salmonids, this structure still appears to be inadequate for providing upstream passage to smaller juvenile

steelhead, but adult passage was most certainly improved. Downstream passage also most likely benefitted, as any out-migrating fry and smolt now have a pool to land in once passing over the irrigation dam. The structure was still in for the 2016/2017 winter.

## FISH CULTURE

### Acclimation at Greens Creek and Skunk Creek – Grants Pass

The spring of 2017 marked the second year for acclimating winter Steelhead two-year old smolts in degraded Grants Pass tributaries with the objective of maximizing contribution of hatchery fish to this urban fishery on the Rogue River. Sand Creek was abandoned due to poor water quality concerns, and a land owner conflict. A total of 10,240 Steelhead smolts were acclimated



*Photo 29: One of the pools below a fish barrier on Greens Creek was temporarily screened to so that winter steelhead could be acclimated for 10 days.*

in Greens Creek and Skunk Creek within the city limits of Grants Pass. These sites were chosen as new locations because their access is via public property right-away, existence of anadromous barriers, and proximity to a popular boat fishing reach and bank angler access. Volunteer efforts to monitor water temperatures the year before also helped in the decision making process to use these creeks as acclimation locations.

Greens Creek has cold water running throughout the spring and summer, but has 4 barriers on it in a ¼ mile stretch beginning at its confluence with the Rogue. It is a naturally steep drainage and addressing fish passage would not be economically feasible nor realistic in the foreseeable future. The bisection of

Greens Creek by 2 irrigation ditches served as a convenient conveyance flume to make smolt delivery easier. Two pools below these ditch crossings were screened and smolts reared for 12 days until volitional release.

Skunk Creek is a fishless creek in downtown Grants Pass where a 30 foot high natural waterfall prevents anadromous fish passage. It is also used to convey storm and irrigation water, and its basin is one of the most impacted basins in Grants Pass to do urban and industrial development. Smolts reared in Skunk Creek for approximately 5 days until a spring thunderstorm brought the creek up and smolts were volitionally released. This project was a collaboration between Grants Pass Irrigation District (GPID), the Middle Rogue Steelheaders, a private landowner, and STEP.



*Photo 30: Smolt delivery at acclimation sites on Greens and Skunk Creek in Grants Pass was a challenge but STEP volunteers built a delivery flume using an irrigation canal and pipe to areas that were inaccessible by liberation truck.*

Two newspaper articles were written on the project. The Grants Pass Daily Courier published “Fish for the Future” on April 28, 2017 which made the front page. The other, titled “Up a Creek”, was published on the front page of the Outdoors Section of the Medford Mail Tribune on Friday May 5, 2017.

### Holy Water Fin Marking, tagging and stocking

The Holy Water trout fishery is a 0.7 mile stretch of the Rogue River above the Cole Rivers Fish Hatchery blocker dam and William L. Jess Dam (Lost Creek Lake). This piece of water is stocked with triploid rainbow trout and also has small natural production of rainbow trout. The stretch of water has received the moniker of the “Holy Water” for the famed larger rainbow trout that it has produced. It is Oregon’s only catch and release, fly fishing only stretch of water, year-round.

This past 2016-2017 reporting period, members of the Rogue Flyfishers (RFF) paired with the Upper Rogue STEP Biologist to construct eight voluntary angler reporting creel stations to evaluate catch per unit effort, angler demographics, and recovery of tagged fish information.

In late April, volunteers with RFF adipose fin-clipped and floy tagged 400 14-16 inch rainbow trout averaging 3 pounds each for release into the Holy Water in May. This release was just before the annual Salmon Fly hatch and was intended to jump start what some anglers had felt was a slowing fishery. The tagged fish helped to identify what percentage of natural production versus stocking production still exists in the Holy Water. Additionally, RFF volunteers helped with the annual stocking of 2000 adipose fin-clipped rainbow trout fingerlings in September. This stocking is all covered in the Cole Rivers Hatchery Management Plan.

Two newspaper articles were written about the Holy Water and STEP activities during this reporting period:

1) “Trout Test in the Holy Water”, published by the Mail Tribune  
5/26/2017 <http://www.mailtribune.com/entertainmentlife/20170526/trout-test-in-holy-water>

2) “Raining Rainbows at the Holy Water”, published by the Mail Tribune  
9/29/2017 <http://www.mailtribune.com/entertainmentlife/20170929/raining-rainbows-at-holy-water>

### Rogue Spring Chinook Broodstock Collection at Cole Rivers Hatchery

The summer of 2017 was the first year where a trap at the outlet channel of Cole Rivers Hatchery was operated. This year volunteers from the Middle Rogue Steelheaders, Rogue Flyfishers and local High School Students helped in sorting through wild and hatchery broodstock. Volunteers helped in the collection of adults with dip nets and transporting them to a transport truck. STEP volunteers will be integral in this project that meets Upper Rogue District management goals of the Rogue Spring Chinook Conservation Plan by reducing potential impacts of straying hatchery fish onto wild fish spawning habitat.

### Egg to Fry Program

A total of 4,800 eyed spring Chinook salmon eggs from Cole Rivers Hatchery were delivered by six volunteers to 30 classrooms from Prospect to Cave Junction in the Rogue River Basin during the fall of 2016. Students raised these in classroom incubators consisting of aquariums and water chiller units from 10/26/2016-12/15/2016, then released them in the Rogue River. Students learned about salmonid life cycle, habitat requirements and impacts, and social and environmental contributions of Pacific salmonids to the State of Oregon.

## **Schools and Groups that work with Upper Rogue STEP**

The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

<p><b>Elementary, Middle, and High Schools</b></p> <ul style="list-style-type: none"> <li>Allendale Elementary</li> <li>Applegate Elementary</li> <li>Brighton Academy</li> <li>Crater High School</li> <li>Fruitdale Elementary</li> <li>Grants Pass High School</li> <li>Griffin Creek Elementary</li> <li>Helman Elementary</li> <li>Hidden Valley High School</li> <li>Hoover Elementary</li> <li>Howard Elementary</li> <li>Jacksonville Elementary</li> <li>Jewett Elementary</li> <li>Kids Unlimited</li> <li>Lake Creek Learning Center</li> <li>Lincoln Elementary</li> <li>Logos Public Charter School</li> <li>Lorna Byrne Middle School</li> <li>Madrone Trail Charter School</li> <li>Mae Richardson Elementary</li> <li>North Medford High School</li> <li>Oak Grove Elementary</li> <li>Prospect Charter School</li> <li>Rogue River Elementary</li> <li>Ruch Community Elementary</li> <li>St Mary’s School</li> <li>Talent Middle School</li> <li>Various Homeschools</li> </ul>	<p><b>Colleges and Universities</b></p> <ul style="list-style-type: none"> <li>Oregon State University</li> <li>Rogue Community College</li> <li>Southern Oregon University</li> <li>Western Oregon University</li> </ul> <p><b>Organizations</b></p> <ul style="list-style-type: none"> <li>Coastal Conservation Association</li> <li>Crater Bass</li> <li>Middle Rogue Steelheaders</li> <li>Rogue Flyfishers</li> <li>Southern Oregon Flyfishers</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>Ashland Parks and Recreation Department</li> <li>BLM – Grants Pass</li> <li>BLM/Forest Service – Medford Interagency Office</li> <li>City of Ashland</li> <li>City of Cave Junction</li> <li>City of Central Point</li> <li>Grants Pass Irrigation District</li> <li>Jackson County Parks Department</li> <li>Josephine County Parks Department</li> <li>Medford Irrigation District</li> <li>Oregon State Parks</li> <li>Phoenix Public Utility Department</li> <li>USFS – Cave Junction, Medford</li> </ul> <p><b>Watershed Councils</b></p> <ul style="list-style-type: none"> <li>Illinois Valley Watershed Council</li> <li>Seven Basins Watershed Council</li> <li>Applegate Watershed Council</li> <li>Rogue River Watershed Council</li> </ul>
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## East Region

### Eastern Oregon STEP

Jennifer Luke, STEP Biologist  
Eastern Oregon District Biologists

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, stocking fish, and restoring fish habitat.

Volunteers assist with a variety of surveys including electro-fishing, trap netting, spawning surveys, snorkel surveys, hook and line surveys and zooplankton sampling. 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 share their knowledge of both fishing and conservation and their involvement fosters the next generation of conscientious anglers and conservationists.

### EDUCATION AND PROGRAM DEVELOPMENT

#### Kokanee Carnival

Kokanee Carnival Youth Education Program continues to be a popular education program for Deschutes, Jefferson, and Crook County elementary students. It is an annual program and began in 1998. In its 19<sup>th</sup> year, 2016-2017, 360-400 students participated in the Kokanee Carnival *Comprehensive* Education Program. This program includes classroom activities as well as field trips to learn about salmon, trout and their habitat. The students also tour a hatchery and attend a spring fishing clinic.

Approximately 2,550 students participated in the Kokanee Carnival *Electives* Program in which teachers sign up for classroom activities such as raising trout, basic trout biology class, and (or) angler education. Kokanee Carnival receives exceptional support from both the volunteer community and our financial sponsors. Partners for the Kokanee Carnival include STEP, Central Oregon Flyfishers, Sunriver Anglers, USFWS, and the Deschutes National Forest. The STEP biologist serves on the Kokanee Carnival steering committee, coordinates portions of the program, and provides training, technical assistance and volunteer recruitment.



*Photo 31: Volunteers teaching about macroinvertebrates at the Sheep's Bridge Kokanee Carnival field trip.*

In 2016-2017, the STEP biologist recruited and scheduled volunteers to serve as instructors at Kokanee Karnival's six-day angling clinic. The STEP biologist prepared activities and materials for the Trout Dissections, Angling Clinic, Fall Streamside field trip, Fish Eggs-to-Fry, and Kokanee Karnival classroom presentations.

### Spring Creek Acclimation and Youth Angling Pond

A new STEP salmon-trout and youth angling education site has been under development in 2016-2017. The site is already used by Kokanee Karnival program volunteers. The shallow creek, the springs and the meadow provide an excellent location for



*Photo 33: Students from Black Butte brave the snow to plant trees at the new Spring Creek Pond.*



*Photo 32: Students planting native milkweed near pond.*

students to perform stream studies. It is also an excellent site for a small fishing pond that would provide an easy angling opportunity for families. The small half acre pond is nearly complete and the youth-only fishing pond will be open to the public in 2018. Presently, there is no easy opportunity in the area for kids to catch fish. The goal of this project is to provide access to a safe and easy place for families to fish, and provide safe access to a unique area where Salmon Trout Enhancement Program volunteers can continue to conduct field trips and expand fisheries and watershed education programs. The pond will also be used for chinook or sockeye smolt acclimation and salmon egg incubation as part of the salmon reintroduction program in the Metolius River. Also under development is a parking area, volunteer host site, and public facilities.

### Outreach Events

The STEP biologist participated in salmon and trout related outreach activities for students of all ages. The STEP biologist and District biologists presented information or provided materials for events sponsored by the following events: Ponderosa Third Grade, High Lake's Elementary "Science and Fisheries Field Trips," Prineville's "Fin, Feather and Fire Festival" Chiloquin 5<sup>th</sup> grade fishing and science field trip,

The STEP biologist attended Central Oregon Flyfisher and Sunriver Angler group meetings for volunteer recognition and outreach purposes.

## **INVENTORY AND MONITORING**

### Crooked River Redband Population Estimate

Biologists and volunteers sampled Redband Trout and whitefish below Bowman Dam on the Crooked River. This seven mile stretch of river is a very productive trout fishery, and angling is

popular year round. The survey is conducted annually because the population has been cyclical and the exact reason is unclear, although biologists believe it has to do with flows and gas bubble disease. The sampling effort takes 5 days, and each day at least 6 people, 3 biologists and 3 volunteers are necessary to complete the survey. During sampling, fish are stunned and netted so biologists and volunteers can record size, condition and abundance. The fish are released unharmed. The population assessment estimates the number of Redband Trout and mountain whitefish 8 inches long or longer per river mile.

#### Spawning Surveys- Redband and Bull trout

Volunteers are paired with local biologists and trained to identify and count redds. Redband spawning surveys are conducted from December through May in the Metolius River. Upper Deschutes Redband Trout surveys are conducted in May and Metolius bull char surveys in September and October. In the Klamath district, volunteers also conduct spawning surveys on the Wood and Williamson rivers. Volunteers are essential for completing these spawning surveys and it provides valuable information for monitoring native trout populations.

#### Zooplankton sampling

Volunteers assisted biologists collecting zooplankton samples from lakes and reservoirs. Zooplankton abundance, species and size is an indicator of available forage for kokanee salmon and juvenile trout. Volunteers collected and analyzed samples of from East Lake, Paulina Lake, South Twin, North Twin Lakes and Wickiup Reservoir.

#### East, Paulina, Lava Lake Invasive Tui and Blue Chub Control

The trout populations in three popular trout fishing lakes (East, Paulina and Lava) will deteriorate if the invasive population of chub goes unchecked. As part of a chub control plan, OSU Cascades interns and volunteers mechanically removed chub with trap and fyke nets during 2010-2014. This effort was very successful, and trout conditions improved significantly. As a result, anglers reported good to excellent fishing in these lakes following chub removal. Chub removal ceased in 2015 and 2016, and based on monitoring during this time, chub growth increased. In June 2017, the STEP biologist directed the efforts of the interns and volunteers to remove chub and monitor trout conditions and zooplankton conditions. Trap nets are set on the shoreline during the chub spawning season (May-July) and nets are emptied every other day. In East Lake (2017) the chub “spawner” population estimate was 83,644. It was estimated that 11% of that population was trapped and removed. In aggregate, approximately 15,500 pounds of chub were removed from East, Paulina and Lava lakes in 2017.



*Photo 34: Volunteers wading the creek while performing Bull Trout spawning surveys.*

## **FISH CULTURE**

### Stocking Steelhead and Chinook Salmon in Deschutes Reintroduction Areas

Volunteers backpacked in thousands of steelhead and Chinook fry in remote canyon areas, or places not accessible by stocking truck, in order to disperse fry in suitable rearing habitat. Stocking steelhead and Chinook fry and smolts is part of the reintroduction and conservation plan of anadromous salmon and steelhead in the Upper Deschutes basin. Volunteers also assisted in PIT tagging Chinook and steelhead smolts in order to evaluate survival and/or migration to the dam facility

#### Fish Eggs to Fry:

Thirty one classrooms (excluding 39 Kokanee Karnival schools) from all over Eastern Oregon, including Klamath Falls, Milton-Freewater, John Day, Heppner, Drewsey, Baker, and Condon 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. All rainbow trout were released in ponds or reservoirs. Steelhead trout were released in the upper Crooked River basin.

### **Schools and Groups that work with Eastern Oregon STEP**

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The following is a partial list of schools, school districts, 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 (503) 947-6211 if your program has been left off this list.

#### **Elementary, Middle, and High Schools**

Baker Technical Institute  
 Barnes Butte  
 Bear Creek Elementary  
 Bend LaPine Online Classes3  
 Boardman/Riverside Jr High  
 Central Christian School  
 Chiloquin Jr & Sr High School  
 Condon Grade School  
 Crook County Middle School  
 Culver HS  
 Dayville School  
 Eastmont Community School  
 Eagle Ridge HS - Klamath  
 Harney County Library  
 Henley Elementary  
 Heppner High School  
 High Lakes Elementary  
 Highland Elementary  
 Jewell Elementary  
 John Tuck Elementary  
 La Pine Elementary  
 Lava Ridge Elementary  
 Metolius Elementary  
 Miller Elementary School  
 Milton-Freewater  
 New Horizon Christian School  
 Pelican Elementary  
 Peterson Elementary  
 Pine Ridge  
 Pine Eagle High School  
 Pine Ridge Elementary  
 Ponderosa Elementary  
 Ponderosa Middle School

Powell Butte Community School  
 Roosevelt Elementary  
 Sage Community School  
 Saint Francis School  
 Sherman Elementary  
 Sisters Elementary  
 Triad School  
 Umatilla High School  
 Terrebonne Community School  
 Three Rivers School  
 Vern Patrick Elementary  
 YMCA – Klamath Falls

#### **Organizations**

Central Oregon Flyfishers  
 Klamath Country Flycasters  
 Sunriver Anglers  
 Sunriver Resort  
 YMCA- Klamath Falls

#### **Government**

US Forest Service  
 US Fish and Wildlife Service  
 Burns Paiute Tribe

#### **Watershed Councils**

Walla-Walla Watershed Council

## STEP Administration

Kevin Herkamp, STEP/RE Program Coordinator  
Debbi Farrell & Jeff Davis, STEP/RE Program Assistant  
Mike Gauvin, Recreational Fisheries Program Manager

This reporting period saw a slight change in program administration. The Program Assistant position was back filled for the final 4 months while Debbi was on a job rotation.

## EDUCATION AND PROGRAM DEVELOPMENT

### Salmon Trout Advisory Committee

STAC held four meetings across the state:

- December 2016, Salem
- April 2017, Portland
- September 2017, Medford

During this time period, we had no new appointments even though three positions were vacant much of the time. Two positions were renewed (Don Wenzel, Ken Range). The thirteen STAC members are appointed by the Governor to represent the volunteer community in specific geographic areas of Oregon.

### Education Program Updates

In partnership with Western Oregon University, staff began an effort to update 3<sup>rd</sup> grade STEP related education materials to meet new education standards and connect Oregonians to salmon, trout and their habitats. After several delays and EPA grant was secured and work began in September 2017, beta versions of materials and teacher trainings are scheduled to be in place by June 2018.

More information about STEP and the STAC board and meetings can be found on the STEP webpage located at <http://www.dfw.state.or.us/fish/step/>

## APPENDICES

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



<b>Member</b>	<b>Region</b>	<b>Term</b>	<b>Term Expires</b>
Vacant	North Coast		
Vacant	North Coast		
Brian Hudson	Mid-Coast	Second Term	January 9, 2020
Deborah Yates	Umpqua	First Term	December 31, 2017
Curtis Bennett	Tenmile, Coos, Coquille	First Term	January 9, 2020
Ken Range	Lower Rogue	Second Term	March 31, 2021
Vacant	Upper Rogue		
Lin Howell	Lower Willamette	Second Term	July 22, 2018
Tom VanderPlaat	Lower Willamette	Second Term	Jan 9, 2020
Don Wenzel	Mid-Willamette	First Term	January 14, 2021
Jeff DeVore	Upper Willamette	First Term	December 31, 2017
James Phelps	Northeastern Oregon	Second Term	March 31, 2020
Steve Janego	Eastern Oregon	First Term	March 31, 2020

\*List current as of December 15, 2017

<sup>1</sup> A maximum length-of-service policy of two 4-year terms was implemented in 1996.

## Appendix 2: Salmon and Trout Enhancement Program (STEP) Staff



### **Statewide:**

Kevin Herkamp, STEP/R&E Coordinator  
4034 Fairview Industrial Dr. SE, Salem, OR 97302  
Email: [Kevin.Herkamp@state.or.us](mailto:Kevin.Herkamp@state.or.us)

Phone: (503) 947-6232  
Fax: (503) 947-6202

Debbi Farrell, R&E / STEP Program Assistant  
4034 Fairview Industrial Dr. SE, Salem, OR 97302  
E-mail: [Debbi.L.Farrell@state.or.us](mailto:Debbi.L.Farrell@state.or.us)

Phone: (503) 947-6211  
Fax: (503) 947-6202

### **North Coast STEP:**

Ron Rehn, STEP Biologist  
4909 Third Street, Tillamook, OR 97702  
E-mail: [Ron.F.Rehn@state.or.us](mailto:Ron.F.Rehn@state.or.us)

Phone: (503) 842-2741  
Fax: (503) 842-8385

### **Mid-Coast STEP:**

Christine Clapp, STEP Biologist  
2040 SE Marine Science Dr., Newport, OR 97365  
E-mail: [Christine.M.Clapp@state.or.us](mailto:Christine.M.Clapp@state.or.us)

Phone: (541) 265-9894 x253  
Fax: (541) 867-0311

### **Umpqua STEP:**

Evan Leonetti, STEP Biologist  
4192 N. Umpqua Highway, Roseburg, OR 97470  
E-mail: [Evan.Leonetti@state.or.us](mailto:Evan.Leonetti@state.or.us)

Phone: (541) 440-3353  
Fax: (541) 673-0372

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

Gary Vonderohe, STEP Biologist  
P.O. Box 5430, Charleston, OR 97420  
E-mail: [Gary.R.Vonderohe@state.or.us](mailto:Gary.R.Vonderohe@state.or.us)

Phone: (541) 888-5515  
Fax: (541) 888-6860

Antonio Salgado, STEP Biologist  
P.O. Box 5430, Charleston, OR 97420  
E-mail: [Jose.A.Salgado@coho2.dfw.state.or.us](mailto:Jose.A.Salgado@coho2.dfw.state.or.us)

Phone: (541) 888-5515  
Fax: (541) 888-6860

## Appendix 2 (continued)

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### **Lower Rogue STEP:**

John Weber, STEP Biologist  
P.O. Box 642, Gold Beach, OR 97444  
E-mail: [John.A.Weber@state.or.us](mailto:John.A.Weber@state.or.us)

Phone: (541) 247-7605  
Fax: (541) 247-2321

### **Upper Rogue STEP:**

Ryan Battleson, STEP Biologist  
1495 E. Gregory Road, Central Point, OR 97502  
E-mail: [Ryan.D.Battleson@state.or.us](mailto:Ryan.D.Battleson@state.or.us)

Phone: (541) 826-8774  
Fax: (541) 826-8776

### **Lower Willamette STEP:**

Jeff Fulop, STEP Biologist  
17330 SE Evelyn Street, Clackamas, OR 97015  
E-mail: [Jeff.S.Fulop@state.or.us](mailto:Jeff.S.Fulop@state.or.us)

Phone: (971) 673-6034  
Fax: (971) 673-6071

### **Mid-Willamette STEP:**

Karen Hans, STEP Biologist  
7118 NE Vandenberg Avenue, Corvallis, OR 97330  
E-mail: [Karen.M.Hans@state.or.us](mailto:Karen.M.Hans@state.or.us)

Phone: (541) 757-4186 x251  
Fax: (541) 757-4252

### **Upper Willamette STEP:**

Katherine Nordholm, STEP Biologist  
3150 E. Main Street, Springfield, OR 97478  
E-mail: [Katherine.E.Nordholm@state.or.us](mailto:Katherine.E.Nordholm@state.or.us)

Phone: (541) 726-3515 x28  
Fax: (541) 726-2505

### **Eastern Oregon STEP:**

Jennifer Luke, STEP Biologist  
61374 Parrell Road, Bend, Oregon 97702  
E-mail: [Jennifer.A.Luke@state.or.us](mailto:Jennifer.A.Luke@state.or.us)

Phone: (541) 388-6366  
Fax: (541) 388-6281

\*List current as of December 12, 2017