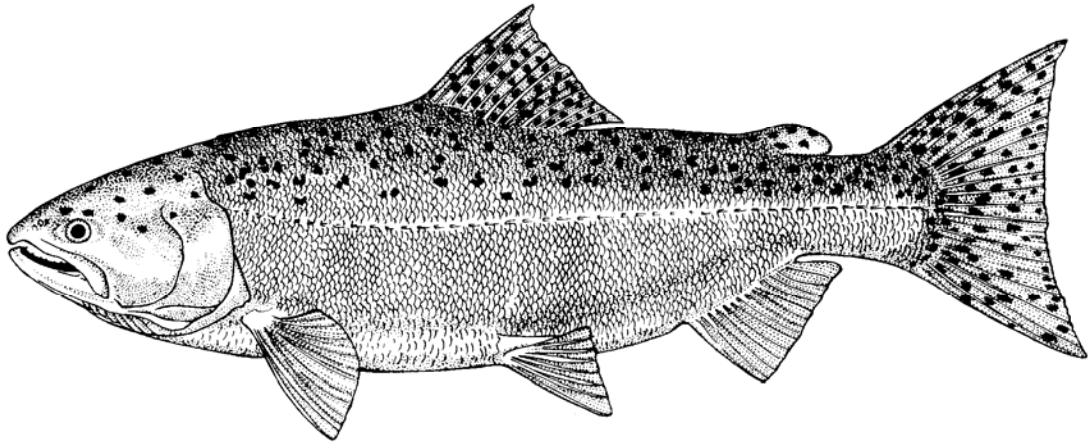
SALMON TROUT ENHANCEMENT PROGRAM

ANNUAL PROGRESS REPORT for 1999



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EXECUTIVE SUMMARY

We report on the activities and accomplishments achieved from October 1, 1998, through September 30, 1999, during the implementation of the Salmon Trout Enhancement Program (STEP). The Salmon Trout Enhancement Program involved citizens in activities that enhanced salmon, trout and other fish resources of the state. Trained volunteers worked with Oregon Department of Fish and Wildlife (ODFW) personnel on projects to rehabilitate and enhance salmon, trout and other fish populations and their habitat. Projects also served as education opportunities to increase understanding by the public of Oregon's aquatic resources and the environment.

STEP projects focused on characterizing fish populations and their habitat in streams, improving habitat, and culturing fish to supplement natural production. Citizen volunteers helped collect information on fish populations and habitat by conducting physical and biological stream surveys. They also assisted with projects to enhance fish passage, and fish spawning and rearing habitat. Finally, citizen volunteers contributed significant effort to ODFW programs to develop broodstock, incubate eggs, and rear fish to enhance populations of naturally produced salmon and trout.

The Salmon Trout Enhancement Program Public Advisory Committee (STAC) recognizes eight key issues directed towards STAC involvement. Those are: outreach to industry, local government and other agencies, funding, roles and responsibilities of STAC, structural organization of STAC, recruitment of STAC, selection of STAC members, performance of STAC, and training for STAC members.
The STEP biologists participated in the ODFW Volunteer Council working groups to discuss volunteer management within the STEP program and interacted with ODFW Volunteer Coordinators to discuss their program activities. This semi-annual exchange of ideas is a valuable learning experience.

The following narrative describes highlights of activities generated by volunteers in each ODFW region and STEP district.

Highlights of results of our work in 11 STEP districts are identified in the Summary of STEP Participation Appendix Table 1. A report for each STEP district is available upon request.. Appendix Table 2. provides STEP biologist contact information and Appendix Figure 1 identifies the STEP district boundaries.

Northwest Region

North Willamette District

The North Willamette Fish District encompasses the Portland Metropolitan (Metro) Area that contains the largest concentrated population of people in the state of Oregon. The territory is bounded by the Columbia River on the north, the Tualatin and Clatskanie River drainages on the west, the crest of the Cascade Range on the east, and divides at the Molalla River in the Willamette Valley to the south.

Recruitment activities initiated during the report period included presentations to schools, Watershed Councils, sportsmen groups, and civic organizations. STEP displays, information, and materials were provided &/or setup at:

- the Salmon & Mushroom Festival held in the town of Welches;
- the Johnson Creek Watershed Summit held at Marshall High School in southeast Portland;
- the Scappoose Bay Watershed Fair held in St. Helens;
- the 2nd annual Johnson Creek Watershed Event;
- the Marking and Tagging System (MATS) demonstration held in Clackamas;
- the Friends of Beaver Creek sponsored *Native Plant* Sale;
- the "Passport to Fishing" *Free Fishing Day* event held at Bonneville Fish Hatchery;
- the Westmoreland Park Fishing Clinic held along Crystal Springs Creek in southeast Portland;
- the Oregon Fishing Club sponsored event for children from Doernbecker Hospital;
- the fishing event at Camp Angelos Pond for urban city kids;
- the Oxbow Salmon Festival held at Oxbow Metro Park and;
- the Volunteer Picnic held at NW Regional Office in Clackamas.

These twelve recruitment activities generated a contact with thousands of individuals attending these special display events.

The STEP Biologist implemented the use of four ODFW publications to encourage education of school students and citizens from the general public to information regarding watershed health, water quality protection, life-cycle development for cold water fishes, and habitat enhancement for salmonids.

The Stream Scene, Watersheds, Wildlife and People is the direct connection for the students from the classroom to the field activity. Teachers seeking involvement with STEP activities were encouraged to review The Stream Scene and follow the involvement process.

Storm Drain Marking Program material was distributed upon request to the public to direct them in water quality education and protection projects. The material provides information on the development and implementation of a storm drain-stenciling project. Storm drains are identified

by a print of a fish and literature distributed to adjacent residences informing them of the intended function of the storm drain. A set of related teaching activities are available for educators.

The Fish Eggs To Fry manual plus the Classroom Incubation Support Activities manual are self help program for schools to setup classroom incubation systems to study the live-cycle development for cold water fishes. The North Willamette STEP district involved one hundred twenty schools in fish egg incubation activities and one fish egg incubation & rearing project at Mt. Hood Community College.

The Stream Care Guide brochure provides pertinent information to anyone interested, including landowners with property adjacent to streams, concerning protecting and enhancing streamside habitat.

Four free fishing clinics: the "Passport to Fishing" Clinic at Bonneville Fish Hatchery, the Westmoreland Fishing Clinic sponsored by Milwaukie High School, the Oregon Fishing Club sponsored fishing event for children from Doernbecker Hospital, and the Camp Angelos Pond fishing clinic for urban kids sponsored by members of the Association of Northwest Steelheaders, were conducted in the Portland Metro Area. These free fishing events, including the "Passport to Fishing" Clinic at Bonneville Fish Hatchery celebrating it's sixth year, focused on the participating kids learning the proper techniques & instructions for fishing with the support of volunteers from eleven sportsmen clubs assisting in this well received fishing clinic event.

Nine training workshops directed toward youth/education programs and six training workshops for members of the general public were conducted. Youth & education groups plus several members of the general public participated in training workshops for projects such as; habitat inventory, spawning fish survey, fish trapping/sampling inventory, juvenile fish inventory, fish culture egg incubation, and in fish acclimation. A total of one hundred sixty-seven students and seventy-one members of the general public received training.

Volunteers were trained in spawning fish inventory and projects were initiated in the North Fork of Eagle Creek, Milton Creek, and Clear Creek. Ongoing spawning fish surveys continue to be conducted by students as well as citizen volunteers in district streams including; Abernethy Creek, Beaver Creek, Tryon Creek, Tickle Creek, Kelly Creek, Crystal Springs Creek, and Johnson Creek.

Fish presence/absence surveys were conducted in McNulty Creek and Fairview Creek with the assistance of volunteers.

Students and local volunteers from the Oregon Bass & Panfish Club assisted in fish population inventory projects by setting floating live traps and sampling several district ponds including Wahkeena Pond, Salish Pond and Mt. Hood College Pond.

Two upstream migrant adult fish trapping projects were initiated in the fish district. Volunteers from the Scappoose Bay Watershed Council assisted in building and monitoring an adult fish

trap at the Bonnie Falls Fish Ladder on the North Fork of Scappoose Creek. This trap is currently in operation and valuable information is being collected. Volunteers also assisted in trapping and sorting fish at the Marmot Dam Fishway on the mainstem Sandy River.

The third year of the stream ***nutrient enrichment*** project was completed with cooperation from the US Forest Service (USFS) Zig-Zag Ranger District. The project involved placing four hundred adult Coho Salmon carcasses. The carcasses are intended to mimic historic run densities of spawning Coho Salmon in the system, in Still Creek to increase the nutrient levels for aquatic organisms. Volunteers from the Association of Northwest Steelheaders along with students from Corbett High School and Central Catholic High School donated approximately eighty hours distributing the carcasses over a two-month period at designated locations in Still Creek. The STEP Biologist secured adult Coho Salmon carcasses from ODFW's Sandy Fish Hatchery and transferred the carcasses to the volunteers on a weekly basis.

A second stream *nutrient enrichment* project was completed in the North Fork of Eagle Creek and Bear Creek. This project was a cooperative effort between ODFW, the Bureau of Land Management (BLM), and Eagle Creek National Fish Hatchery. Two hundred Coho Salmon carcasses were distributed in the north fork Eagle and Bear Creeks by members of the Boy Scouts of America (BSA) Eagle Scout Troop #35.

Students from the River Keepers Program conducted water quality analysis at the project sites in Still Creek where the *nutrient enrichment* project took place. Invertebrate sampling in the treatment area as well as algal sampling and analysis was conducted by students from Portland State University.

Hobo temperature monitoring probes were placed in several tributaries of the Clackamas River by volunteers from the Clackamas River Watershed Council. This temperature analysis is intended to document summer water temperatures in creeks within the urban area where riparian planting projects were conducted in past years.

Nineteen habitat improvement projects were completed during the report period. Approximately 93 students and 214 adult volunteers donated 1348 hours of labor and approximately two thousand two hundred fifty dollars towards stream habitat improvement efforts.

Two fish passage projects were completed on Henry Creek and Buck Creek both of which required maintenance following high winter water flows. Members of the Sandy Chapter of the Association of Northwest Steelheaders volunteered time and over two thousand dollars restoring adult fish passage on Buck Creek.

Ongoing culvert inspection projects were conducted by volunteers from the Clackamas River Watershed Council along tributaries of the Clackamas River. These inspections identified potential passage problems, both upstream and downstream, for adult & juvenile fish.

Six riparian planting projects were initiated in the Portland Metro Area. A continuing project was conducted along Beaver Creek by members of the Friends of Beaver Creek, local school students, scouts and members of the City Parks Department. Native trees were donated to the

project by the Friends of Beaver Creek group with a grant received by the City of Troutdale Parks Department. Additional projects were conducted on Fanno Creek by the Fans of Fanno Creek, on Deep & Goose Creeks by members of the Clackamas River Watershed Council, on Crystal Springs Creek sponsored by the Johnson Creek Watershed Council, on Mt. Scott Creek sponsored by Clackamas County Water Environmental Services along with the Friends of Mt. Scott/Kellogg Creeks, and on Wee Burn Creek conducted by volunteers from the Riverkeepers Organization. These projects were conducted to stabilize stream bank soils and to provide shading for the streams.

Three *Earth Day* stream cleanup projects were conducted by students, scouts, and local citizen volunteers along Beaver Creek, Fanno Creek, and Mt/ Scott Creek. Over thirty volunteers participated in the Beaver Creek *Earth Day* stream cleanup project and donated approximately one hundred eighty hours of volunteer time. The Stop Oregon Litter and Vandalism organization (SOLV), once again, provided grant money for trash bin rental & garbage bags and the Friends of Beaver Creek sponsored a hot dog lunch for all project participants. The other *Earth Day* stream cleanup projects were sponsored by the Fans of Fanno Creek and by students from Happy Valley Elementary School.

Clackamas County Water Environmental Services initiated a habitat enhancement project on Mt. Scott Creek. The STEP biologist designed the twelve instream structures and secured a donation of fir logs for the structures from Multnomah County Department of Transportation.

One instream habitat enhancement project was completed along Cedar Creek. This project was a cooperative effort between LongView Fibre Tree Farm and ODFW. LongView Fibre donated logs, equipment, and the equipment operator to build several instream structures to increase fish habitat diversity and slow down water velocities in Cedar Creek.

The efforts to rehabilitate and restore natural habitat, implementation of the Wild Fish Management Policy, basin plan development, and STEP administrative rule limitations has redirected the focus of STEP volunteer **fish culture activities** in the North Willamette Fish District.

Unfed fry releases from streamside hatchboxes of all fish species are reduced due to concerns for the genetic integrity of indigenous species and efforts directed into habitat restoration, acclimation, and rearing of juvenile fish. This is an attempt to increase wild fish production, reduce competition of hatchery stocks on wild fish production, improve hatchery smolt survival and reduce straying of hatchery stocks thereby improving angler opportunities.

One hundred twenty school classroom incubation projects plus six individual hatchbox projects incubated and released over 177,000 unfed salmon and trout fry into sixteen lakes, ponds, & streams within the Portland Metro Area. Classroom egg incubation projects have a solely educational purpose and are intended to supplement fish life cycle discussions in the classroom. In addition, several local Chapters of the Association of Northwest Steelheaders (ANWST) as well as the local 4-H Program continue to sponsor classroom incubation projects in schools around the Portland Metro Area. The ANWST commitment to the schools includes the purchase

of the incubation equipment (approximately $4,000 this past year) and the delivery of the fish eggs to the individual schools participating in these classroom incubation education projects.

The STEP biologist and volunteers were involved with eight acclimation projects, conducted during the fall & spring of 1998/99, throughout the North Willamette Fish District. Seventy students and local volunteers generated 294 hours of time in completing these acclimation projects. In addition, private landowners operated and assisted with acclimation projects on their private property including; the Cassidy Acclimation Pond, the net-pen acclimation project at Larson's Marina & the Oregon Museum of Science and Industry (OMSI) project. ODFW and Federal hatcheries transferred 435,000 salmon and steelhead smolts to 8 acclimation projects in the district. The acclimation projects were located in several sites including; the Portland Harbor Net-Pen Project in the Willamette River located at the OMSI dock near the Submarine (VO 3494), the Clackamette Cove Net-Pen Project located near the mouth of the Clackamas River upstream from Clackamette County Park (VO 3498), Larry Cassidy's Acclimation Pond which is located on private property adjacent to the Clackamas River near Barton County Park (VO 3495), the Duane Larson Net-Pen Project located at Larson's Marina in Multnomah Channel (VO 3492), and the Marmot Acclimation Pond located adjacent to the Sandy River below Marmot Dam (VO 3493).

Portland Metro Area volunteers were recruited to assist in the Volunteers Fish Stocking Program for catchable trout in the North Willamette Fish District. Eight volunteers accompanied fish liberation truck drivers on twenty trips and donated approximately 120 hours assisting stock catchable trout in lakes and ponds around the Fish District.

Mt. Hood Community College continued their aquaculture fish spawning, rearing, and education research project raising 10,000 rainbow trout from egg stage to adults at the college campus Fish Hatchery. The rainbow trout raised at the Hatchery are stocked into the college campus pond and contribute to the public urban fishery.

Volunteers from the Oregon Bass and Panfish Club have been valuable partners in helping to establish a warmwater fishing site, Wahkeena Pond, in the North Willamette Fish District. Club members have donated labor and dollars to build a floating fishing dock, improve pond fish habitat, and stock the pond with warmwater fish.

Volunteers from the Oregon Bass and Panfish Club also assisted in transplanting juvenile White Sturgeon trapped at the Bonneville Dam pool to the reservoirs above The Dalles and John Day Dams. The volunteer work involved capturing the juvenile fish in nets from a barge in the Columbia River, marking the fish, and transferring the fish to fish liberation trucks.

The US Coast Guard assisted the fish district in a pre-flight inventory of Cascade Lakes in preparation for the every other year high lake fish stocking program. The two day flight, costing approximately $14,400 in donated flight time, tested the Nav Track System which is a Global Positioning System (GPS) locator designed to find the lakes to stock.

Mid Willamette District

The Mid Willamette STEP District is a geographically diverse area reaching across the Willamette Valley from the crest of the Coast range east to the crest of the Cascades. The Willamette River transects the southern and northern boundaries of the District as it travels the length of the valley from its confluence with the McKenzie River near Eugene downstream to Willamette Falls at Oregon City. Within this area, five major stream systems flow from the western slopes of the Cascades into the Willamette (Molalla, Pudding, North and South Santiam, and Calapooia). Another six (North and South Yamhill, Rickreall, Luckiamute, Marys, and Long Tom) drain the eastern slopes of the Coast Range.

The District represents one of the most populated regions of Oregon. Communities in the northern portion lie along the southern edge of the expanding Portland metropolitan area. Further south along the "I-5 corridor" Salem, Corvallis, Albany and Eugene are also experiencing rapid growth. A number of smaller cities, towns and rural communities are interspersed 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.

Information is provided through presentations, displays, and increasingly to participants in field or project tours. Audiences during 1998-99 included individuals and groups of all ages and from a variety of interests and backgrounds. Within the District, 36 indoor and field presentations were made to schools, sportsmen's groups, environmental groups, Watershed Councils, landowner groups and civic/social, business, and professional organizations. Topics included fish biology, ODFW fish management, STEP activities, and examples of public or landowner involvement with STEP. These presentations reached approximately 200 school children and over 700 adults.

Some highlights this past year included:

- Presentations detailing fish resources, management concerns and ODFW volunteer opportunities at Watershed Council and sub-basin landowner meetings. With implementation of the Oregon Plan and increasing emphasis placed upon the involvement of Watershed Councils, this arena has demanded more time of STEP. The District works with nine 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 watershed assessment process.

- Presentations to the cities of Corvallis, Salem and Albany regarding fish issues in urban streams and urban stream management. The cities and the resource management agencies have traditionally ignored the value of aquatic resources and potential for restoration in urban areas. Awareness of the problems urbanization poses to fisheries and interest in the potential for restoration in urban waters has increased not only among residents but also city and state agencies.

- Presentations and field tours given by volunteers to schools participating in the Classroom Incubator Program as well as at several annual outdoor schools held in the Willamette Valley.

- The STEP Biologist held, for the fifth consecutive year, a position on the Oregon Trout Salmon Watch program Corvallis steering committee. The STEP Biologist assisted with the program's teacher training program and conducted presentations during local Salmon Watch field trips.

Changes in both K-12 and college curriculum requirements have resulted in increased student requests for volunteer, internship, or mentoring opportunities with ODFW. STEP has been an excellent program within ODFW to direct this interest. During this past contract year, the Mid Willamette STEP position supervised interns from Oregon State University and Willamette University, hosted six job shadows for high school students, and served in the role of "mentor" for nine additional high school students and their field projects.

Public participation with STEP also occurs via "hands-on" volunteer involvement with ODFW research and management projects. Although STEP projects can be proposed by the public, the majority of adult volunteers seeking involvement with the Mid Willamette STEP District during the 1998-99 contract year requested participation with on-going ODFW projects. Project plans were developed through consultation with District and Region personnel and, when necessary, proposals were routed through Research or other Fish Division staff. Over 3,600 individuals participated in 236 STEP activities in the Mid Willamette STEP District during the past year.

Physical and/or biological surveys were conducted in almost all of the major sub-basins within the District. Fifty-nine adults participated in 29 surveys with the majority of this effort going toward annual index surveys and the operation of fish traps. Almost 1,200 volunteer hours were donated.

Some highlights of this year's survey efforts include:

- Continued volunteer involvement with the construction and operation of fish traps. Traps were maintained and operated by landowners, high school students, Watershed Council volunteers, and members of the Albany Chapter of Northwest Steelheaders (ANWST). As additional needs arose, Albany ANWST volunteers constructed additional traps allowing for expanded inventory efforts. The primary intent has been to document the presence of salmonids in waters where little or no fish data currently exist. The effort has also yielded valuable life history information such as the timing of migrations or identifying areas used by spring chinook salmon or wild steelhead for rearing. Most traps have been located in valley floor or foothill streams that flow through agricultural or urban lands, areas that have not traditionally been sampled for fish by management agencies.

- Continued volunteer assistance with annual ODFW surveys of spawning winter steelhead and spring chinook in Coast Range and Cascade river basins.

- For the third consecutive year, spawning surveys for kokanee in tributaries to Green Peter Reservoir to determine success of natural production.

- Volunteer assistance with snorkel surveys for adult spring chinook salmon, summer steelhead and juvenile winter steelhead.

- Continued volunteer assistance with seining efforts used to determine status of native trout populations in the mainstem Willamette River.

- Expanded volunteer assistance with sampling of small streams to determine the upper reaches of wild trout distribution. Much of the need arose from an intensive effort to locate and resolve fish passage problems created by artificial barriers.

As school projects, 21 surveys involving close to 200 students were conducted. Most of these surveys focused upon streams near to the participating school and were often in urban areas. Students donated over 2100 hours during these efforts with the vast majority of that going toward trap operation and maintenance.

STEP also participated in school survey efforts sponsored by organizations or agencies other than ODFW. STEP serves an advisory and training role in the Adopt-A-Stream Program coordinated by the City of Salem Public Works Department in which ten schools are currently participating. STEP also works closely with an adopt-a-stream effort coordinated by Oregon Watersheds involving schools from several communities along the North Santiam River, and the Marys River monitoring project operating within the Marys River Watershed Council. Schools participating in these programs assist ODFW efforts by collecting information on water quality, habitat, and biological resources while monitoring these conditions on an annual basis. Many of these projects also take the subsequent step of involving their local communities in stream enhancement or protection efforts.

During the 1998-99 contract year, 20 habitat projects addressing both instream and riparian concerns were conducted in eight of the District's sub-basins. With implementation of the Oregon Plan in the Willamette Valley, many projects that take place on commercial timberlands are now coordinated by an ODFW Habitat Biologist funded specifically to work with the timber industry. As a result, STEP has had declining involvement with projects in these areas. Instead, additional habitat enhancement effort has been focused upon waters in agricultural and urban areas.

Most notable were:

- Continued cooperative efforts with Olympic Resource Management on lands owned by John Hancock Corporation along Wiley Creek in the South Santiam basin. Effort this year was directed towards replacing older culvert crossings that created fish passage problems or presented a high risk of failure during storm events.

- Urban stream enhancement efforts in Salem, Corvallis, Albany and Sweet Home that have included significant educational components.

- Several fish ladder projects constructed to resolve passage concerns on private lands. Many of these focused upon small streams in valley floor or foothill areas where the species of primary concern are native cutthroat trout.

Of the 20 habitat projects, two involved area schools with over 60 students participating. The remaining 18 projects were conducted with volunteer assistance from 61 adults.

The increasing emphasis placed upon the conservation of wild fish resources in the Mid Willamette area, particularly in light of decreasing run sizes and potential federal listings for wild spring chinook salmon and winter steelhead under the Endangered Species Act, has led to significant changes in the District's fish culture program. 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.

Currently, all egg incubation projects within the District are for educational purposes only and are not designed to contribute significantly to fish production goals. During 1998-99, schools from both rural and urban areas participated in 87 egg incubation projects raising rainbow trout and spring chinook salmon. The rainbow trout were released by schools at a number of selected locations scattered throughout the valley including many local, isolated ponds. Spring chinook fry were released primarily into the lower Molalla, Santiam and Calapooia River basins. As a means of fostering further public involvement with ODFW's educational efforts along urban streams, Salem schools released their spring chinook fry into Mill Creek.

Classroom egg incubation projects are extremely popular among area schools and the growth experienced by the program since 1992 can be expected to continue. Because the STEP District does not actively promote the program, recruitment of new schools results primarily from communication within the educational community. Participating teachers express an overwhelming enthusiasm for the opportunity to bring such a unique experience into the classroom and to design curriculum that will support the project. Several of this past year’s projects have even established web sites through which they both inform and involve the public in their fish rearing efforts.

The STEP District has worked hard to maintain close contact with each of the participating schools. Eggs have been delivered to each classroom where a brief presentation or question/answer period helps to prepare the students for the project and convey the importance of their effort. The presence of an ODFW Fish Biologist in the classroom allows the students to make the connection between the fish and those entrusted with their protection and provides ODFW invaluable exposure. Unfortunately, demand for the program has exceeded the STEP District’s ability to work directly with each school. Area STEP volunteers have risen to the challenge allowing all participating schools to continue to receive personal attention.

Individual volunteers, volunteers from the Senior Fishing Buddies, and members of the Chehalem Valley, Salem, and Albany Chapters of the Association of Northwest Steelheaders now assist with the classroom egg incubation program. These volunteers have recruited and

"adopted" a number of schools in their local areas. To these schools they provide general information, incubation equipment, and technical expertise. They deliver eggs to the school, give presentations on egg development and fish life history, and participate in field trips to the release sites.

It is conservatively estimated that the classroom incubator program reached well over 2,000 students in the STEP District this past year. This estimate is based upon the average class size for participating schools in the Willamette Valley. It is likely that the actual number even exceeds this as many projects involve multiple classes or, in the case of smaller communities, the entire school. Many of these projects have benefited from significant donations of equipment, or funds to buy equipment, from numerous groups and individuals within the local communities or from sponsoring groups, thus furthering STEP's outreach efforts.

South Willamette District

This STEP District includes the Upper Willamette from the McKenzie River to the headwaters of the Coast and Middle Forks, and the Siuslaw River from Swisshome east, including the Lake Creek Watershed. The STEP biologist position was vacant May - September of this reporting period.

STEP volunteers gave project presentations and participated in tours and training. Local television, radio and newspaper coverage showing volunteer activities and projects enabled local residents to see what was being undertaken in their communities and to become involved in the natural resources projects that were of interest to them.

Volunteers measured and photographed 23 culverts in the Siuslaw basin to assess potential for fish passage problems.

Pleasant Hill High School students constructed a revetment of small conifers on Lost Creek.

Approximately 6,000 spring chinook eggs were incubated in 62 classroom incubators. These fish were liberated as fry into the Alton Baker canoe canal in Eugene.

Volunteers contributed 5,195 hours and drove 54,435 miles to collect broodstock, spawn, hatch, rear, finclip and release more than 7,000 wild, Siuslaw stock, winter steelhead smolts into Whittaker Creek, a Siuslaw River tributary.

North Coast District

Program development is an integral part of the implementation of the STEP program in the North Coast District. As volunteers become involved in projects, they are introduced to the full range of volunteer activities. Presentations to schools and other groups frequently include examples of the wide variety of people involved in the STEP program and introduce them to the types of projects and activities that volunteers are conducting. The Biologist also responded to a

constant flow of telephone calls and walk-in traffic requesting information on the STEP program. STEP informational and training materials were provided to a wide variety of individuals. In addition the following ODFW publications were distributed free of charge to several schools in the District; The Stream Scene, Watersheds, Wildlife and People, Storm Drain Marking Program, Eggs to Fry, Helping Kids Raise Fish, Stream Care brochure, Why Wild (Fish Genetics), Guide to Oregon's Rocky Intertidal Areas, and Naturescaping. The Biologist also supplied posters, handouts, and other educational materials to interested schools. Classroom incubators were placed in ten schools and curriculum materials were supplied to the teachers.

The Oregon Department of Forestry, in conjunction with the Oregon Department of fish & Wildlife, is working with Tillamook Junior High School to develop a curriculum based on the Tillamook State Forest. The goal is to have a curriculum that addresses the new State school Guidelines. The biologist has provided input in developing an aquatic component for the curriculum.

The District added to its lending library of videotapes that were made available to schools, sportsmen's groups and other interested parties. The collection currently includes about 75 tapes. A catalog has been updated and is distributed to schools and other interested parties. Schools have been particularly heavy users of the service. Additional tapes are added to the catalog as appropriate titles are discovered. In addition the Biologist maintains a file of relevant articles, publications and reports that are made available to the public.

The Step Biologist maintained regular communication with District, Region and Portland staff to ensure that all activities were consistent with ODFW management programs and policies.

Numerous Watershed Councils have formed throughout the District. The Governor has designated Watershed Councils as a prime tool to implement the Oregon Plan for Salmon and Watersheds. The plan relies heavily on volunteers to implement many aspects of the plan. The Watershed Councils are doing considerable watershed analysis. STEP has been involved giving presentations to Councils and providing technical advice. This involvement by volunteers and Watershed Councils will undoubtedly involve additional STEP input. The Councils are assuming many roles and functions formerly provided by the STEP Biologist.

Volunteers have assisted in numerous outreach programs. They have developed a fishing event for handicapped children at the Whiskey Creek rearing facility. Volunteers have also used an acclimation net pen to provide a fishing opportunity for kids with cancer. Oregon Trout also has extensive outreach programs to schools through their Salmon Walk program. The biologist and volunteers are an integral part of this program.

Volunteers conducted several spawning surveys. A major effort was conducted by Oregon Trout to survey steelhead and fall chinook in the Salmonberry River. This involved over 60 volunteers and hundreds of hours. Watershed Councils are also initiating spawning surveys and other watershed evaluations.

A new training manual, *Surveying Oregon's Streams a Snapshot in Time*, was developed in the STEP program to train Watershed Councils and other volunteers to conduct physical surveys of streams.

The Pals of Patterson Creek placed downstream migrant traps in Patterson and Jacoby Creeks, which drain into Tillamook Bay. They conducted water quality monitoring in conjunction with the Tillamook Bay National Estuary Project. Volunteers in the Tillamook area have also tied into the Tillamook Bay National Estuary Program for assistance and guidance on various projects.

Oregon Trout has conducted macro-invertebrate sampling in the Salmonberry River. They also maintained a series of recording thermographs in the river. The Vernonia Izaak Walton League has also maintained thermographs in the upper Nehalem river. They have also been involved in spawning surveys of summer Chinook on the upper Nehalem river.

Volunteer anglers also continued to tag sturgeon in Tillamook Bay in a continuing study on sturgeon migration patterns.

Habitat improvement projects continue to be an important component of the activities in the District. The projects vary from small (i.e., single landowner) to large complex projects with volunteer involvement. Habitat restoration work will continue to increase and grow in complexity to address the declining nature of several salmon stocks.

The Oregon Department of Forestry is becoming increasingly involved in habitat improvement projects to benefit fish populations. These are usually contracted projects, but often volunteers assist in anchoring or securing instream structures. The department of Forestry has hired a habitat biologist and volunteers often provide assistance in a variety of projects. The Oregon Forest Industries Council also supports a habitat biologist in the area. Volunteers often assist in various aspects of their projects.

An expanding project in the area is stream enrichment using salmon carcasses from ODFW hatcheries distributed into streams by volunteers. Fish were placed into three basins on the North Coast. In the Nehalem basin 1475 carcasses were distributed. The Nestucca basin received 905 carcasses and the Tillamook basin received 513.

The operation of Whiskey Creek Hatchery is still a major commitment for local volunteers. Whiskey Creek hatchery released ~112,000 spring chinook pre-smolts and smolts into the Wilson and Trask rivers. The facility is also used to rear rainbow trout. These fish are used in the handicapped fishing day at the hatchery.

The increasing interest and commitment to acclimation has resulted in a variety of projects. Nets pen for acclimation of spring chinook were used in the lower Trask and Wilson rivers. An above ground portable raceway was used for steelhead (winter & summer) and spring chinook acclimation on the lower Wilson River. Volunteers placed a new liner in this facility. An additional in-ground acclimation pond was repaired on the lower Wilson River during the summer. This pond was used for acclimating spring chinook, and winter and summer steelhead.

The operation of hatchboxes has stabilized at a lower level from past years and probably will not increase unless appropriate new broodstocks can be developed.

Volunteers have been especially interested in a project to develop a wild winter steelhead broodstock for the Wilson River. The intent is to capture fish by angling. The project began in 1996; however, persistent flooding caused postponing of the project for that year. During 1997/98, 55 wild steelhead were collected for the project of which 43 were collected by volunteer anglers. In 1998, 42,064 wild winter steelhead smolts from the initial broodstock collection were released into the Wilson River. Of those fish 25,900 were acclimated in facilities operated by volunteers. In 1998, 69 steelhead were collected for the project of which volunteers collected 66. A total of 20,530 steelhead were released into the Wilson River. In 1999, 104 adults were collected. Volunteers collected 93 of these fish. Volunteers will continue to collect adults for this program.

Plans are being developed with volunteers to begin a wild winter steelhead broodstock program on the Nestucca River. A new program will begin on the Nestucca this year. Volunteers have renovated an old Oregon Department of Fish & Wildlife facility. This facility was closed due to budget limitations. Volunteers plan to release 100,000 fall chinook smolts to supplement the fishery in the Nestucca.

Two high schools (Astoria & Warrenton) have aquaculture programs that not only serve to educate students, but also release smolts into Youngs Bay. The schools produce fall chinook and coho. Tillamook High School also has a small aquaculture program. Eleven schools are participating in the classroom incubation program.

Mid Coast District (Salmon River to Alsea River)

Volunteers in the Newport Step District participated in five information and extension activities with youth groups and thirty-five with the general public. A total of 360 individuals were reached in youth and educational programs and 1,260 persons were contacted in the public sector.

Newport STEP and the Mid-Coast Watersheds Council were successful in receiving a grant to hire a part-time Watershed Education Coordinator for local schools and youth groups. The education coordinator trained 16 teachers how to utilize the ODFW Stream Scene curriculum and learn recommended field assessment techniques. Over 740 students and 50 parents participated in 25 field trips collecting water quality data, macroinvertebrate and stream habitat data.

Training in habitat restoration techniques, aquatic habitat inventories and spawning surveys were provided to participants of the Lincoln Soil and Water Conservation District (LCSWCD) watershed workforce. The LCSWCD with Newport STEP assistance received a grant to

continue funding a watershed monitoring and restoration project on private lands originally initiated by the ODA “Hire the Fisher” Program. This project has also recruited many new STEP volunteer landowners that have expressed a desire to improve fish habitat.

Newport STEP also assisted the Mid-Coast Watersheds Council, Lincoln Soil and Water Conservation District, Lane and Lincoln County Road Departments to coordinate and identify fish passage problems in mid-coast roads and advise on correction measures. STEP provided county road crews with training on erosion control measures at bridge and road construction and maintenance sites.

Presentations on fish sampling and species identification were given to 25 participants in the Governor's Watershed Workshop held at Drift Creek Camp near Lincoln City. The workshop was designed to give educators the skills and knowledge to use their local stream as watershed learning sites. Participants learned about fish identification, stream surveying, mapping and water quality.

A cooperative educational/interpretive display project describing watersheds and habitat restoration was completed with the Depoe Bay Salmon Enhancement Commission at South Depoe Bay Creek Park and at the Painter Building in Depoe Bay. These two sites have very high exposure and will receive visits by the general public estimated at over 500,000 individuals. The interpretive signs were developed with STEP input on text and drawings. Newport STEP also gave presentations on salmon and watersheds at the annual Oregon Trout "Salmon Watch" program for local high schools on the Yaquina River.

STEP continued to work with mid-coast educators, natural resource agencies, local government and timber companies to promote a Coast Range Natural Resource Education Organization (CRNREO). The CRNREO holds an annual “Forest Camp” for local students and regional schools and is planning to develop natural-resource-based educational programs and a natural resource center in the Alsea School District.

Oregon Parks and Recreation Department partnered with the Waldport Elementary School to incubate and rear 100 steelhead smolts using an aquarium exhibit at the Alsea Bay Interpretive Center in Waldport. Students incubated the steelhead eggs with a classroom incubator then transported the unfed fry to the Alsea Bay Interpretive Center for rearing. Information on coastal salmonids and their life histories accompanied the display and reached an estimated audience of 20,000+ visitors.

Newport STEP participated in the development of the Oregon Plan "Oregon Aquatic Restoration and Enhancement Guide" which provides guidance for instream restoration practices to agencies, Watershed Councils and landowners. STEP also participated in the Governor’s Watershed Enhancement Board grant review and selection process for proposed watershed restoration projects in the Mid and North Coast.

Recruitment for the Newport STEP District consisted of two community-sponsored events. STEP program information and materials were displayed at the Schooner Creek Fair in Lincoln

City and a Free Fishing Day event at the Salmon River Hatchery. All events reached a total estimated audience of 220 individuals.

Eight hundred and eleven adult and youth volunteers conducted a total of 30 spawning, physical, and fish population surveys throughout the Newport STEP District. The Central Coast Northwest Steelheaders and the Hebo US Forest Service continued a steelhead and coho trap operation on the South Fork of Schooner Creek in the Siletz Basin. The objective is long-term monitoring of coho and steelhead populations at a basin scale.

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The Depoe Bay Salmon Enhancement Commission (SEC) installed and operated an adult trap on North Depoe Creek to determine spawner escapement and smolt survival for an ongoing coho supplementation program. The SEC also conducted spawning surveys for coho salmon on North and South Depoe Bay Creeks. Local Yachats area volunteers for fall chinook and coho escapement and spawning distribution also surveyed the Yachats River.

Volunteers assisted ODFW staff to conduct estuarine seining for juvenile chinook in the Siletz, Alsea and Yaquina Rivers. Chinook smolts were sampled for size, condition, timing and abundance. The purpose of this project is to compare present survey data with historic data and begin a long-term data set.

Mid-Coast salmonid restoration projects were completed at Buck Creek, North Fork and South Fork Yachats River, Alsea River, Bummer Creek, Wildcat Creek, South Fork Beaver Creek, Tenmile Creek and Crooked Creek. Project activities included: instream wood placement, riparian release, tree and shrub planting, tree protection installation, fencing, riparian enclosures, culvert removal and culvert replacement to meet 100 year flow standards, off-channel alcove construction, livestock water development, and reestablishment of old historical channels. Landowners cooperated in the design and layout for 1998/1999 projects and preparations for 2000/2001 instream and riparian projects in the Siletz, Alsea, Yaquina and Yachats basins. Planning and developing habitat restoration projects requires a considerable long-term commitment by willing landowners. The pre-project process included on-site meetings, follow-up phone calls, site mapping, project cost estimations and grant writing. STEP volunteer landowners have contributed many pre and post project hours and donations of mileage and equipment during this process.

Volunteers from the Tenmile Association, Audubon Society, Angel Job Corps, and other local volunteers planted One hundred and ten conifers along the riparian area of Tenmile Creek. This cooperative private, state, and federal project is one component of a large-scale watershed restoration project in the Tenmile Creek Basin.

Newport STEP worked cooperatively with the Mid-Coast Watershed Council and Siuslaw Watershed Council in:

a) assessing local watershed conditions;
b) implementing best management practices;
c) developing projects to protect and restore fish habitat and;
d) informing and educating volunteer landowners and interested citizens.

During this period, a total of 75 adult volunteers contributed 833 hours and $230 to broodstock collection, incubation, rearing, release, and acclimation projects.

The Central Coast Northwest Steelheaders, Georgia-Pacific employees and Newport area volunteers assisted ODFW with the operation of a remote steelhead acclimation pond and adult return facility on the Siletz River. Volunteers cleaned pond screens, fed fish and managed data collection at the site. This facility was designed to provide an opportunity for anglers to catch hatchery winter steelhead in the Siletz River with minimal impacts to wild winter steelhead runs. Newport area volunteers and students from Oregon State University also assisted ODFW with the capture of wild adult chinook broodstock for the Yaquina Bay Hatchery. This project is a cooperative adult capture and acclimation release site operated by the Port of Newport with assistance from ODFW and local volunteers. The goal is to generate a small sports fishery inside Yaquina Bay.

The Depoe Bay Salmon Enhancement Commission continued a coho supplementation project on North Depoe Bay Creek. Adult broodstock are captured at North Depoe Bay Creek, transported and then held for egg take at the City of Depoe Bay Reservoir. Eggs are incubated and fry short term reared in circular tubs to around 2 grams each at a hatchery site located above the reservoir dam. Pre-smolt fry are then released into the reservoir to rear naturally.

Newport STEP provided technical assistance and equipment in developing a coho conservation hatchery at Rock Creek on the Siletz River. The program is designed to spawn limited numbers of wild coho adults from selected Siletz streams and release their offspring into tributaries where wild coho are absent or present in extremely low numbers.

Ten schools participated in 14 steelhead and coho egg incubation projects hatching and rearing steelhead to the fry stage. This program reached 423 elementary, middle and high school students with an estimated 975 hours of time donated to operate classroom incubators and release fry.

Ten Waldport volunteers assisted with a rainbow trout holding operation at Eckman Lake near the town of Waldport. This project, called “Youth Fishing Day:” provided a fishing opportunity for local youth.

Mid Coast District (Siuslaw River)

Public education and the distribution of information and materials related to salmon and trout are key components of accomplishing Oregon Department of Fish and Wildlife's (ODFW) management goals. The Newport STEP District at Florence reached out to schools, state and federal resource agencies, sportsman's and conservation groups, Watershed Councils, civic organizations, local government, and the general public to involve, inform and deliver educational programs in the Mid-Coast Region. STEP used a variety of methods to communicate and deliver information including: telephone and mail correspondence, monthly reports, program brochures, publications, curriculum materials, topical handouts, formal and informal presentations, training workshops, and media events. Regular attendance at monthly and technical team meetings with the Florence STEP Group and the Siuslaw Watershed Council

was maintained to educate and inform volunteers on natural resource and management issues and to recruit and coordinate STEP projects.

We participated in 12 information and extension activities with youth groups and 24 with the general public. A total of 324 individuals were reached in youth and educational programs and 362 persons were contacted in the public sector.

Two formal adult training workshops were given during the period. A total of 42 volunteers in the communities of Florence and Mapleton received training on spawning surveys, broodstock collection, egg collection, egg incubation, fry rearing, fish identification and sampling and techniques for habitat restoration. Informal, on-site and "hands on" training and technical advice were delivered to projects as required. A handbook for the Florence STEP Group was reproduced with the help of the volunteers. This work detailed most aspects of the groups activities related to fish culture, surveys and habitat work.

We assisted the Lane County Road Department and the Oregon Department of Transportation to identify fish passage problems in mid-coast roads and assisted local landowners with off right-of-way restoration plantings.

STEP worked with mid-coast educators, natural resource agencies, local government, small landowners and timber companies to promote a restoration strategy for the Siuslaw River wild coho and cutthroat trout.

Recruitment for the program consisted of three community-sponsored events. Florence STEP Group conducted two angling clinics, providing an information program and display for each. These events were held on the Siuslaw River and free fishing weekend at Cleawox Lake. All events reached a total estimated audience of 160 individuals.

A boat ramp at Greenleaf Cr. For access to Lake Cr. Was constructed and operated by the Florence STEP group. Another landowner has approached the group with interest in providing another ramp at Green Cr. for access to Lake Cr.

Thirty-six adult and youth volunteers conducted a comprehensive spawning, physical and biological, and fish population survey throughout a study section on Condon Creek. As part of the Team requirements, each student had to give a brief description of all the activities the Team was accomplishing to peer groups and public groups in the community like the Rotary Club, Lions, and others. This 7th grade Team gave presentations to all other classes at the Middle and High Schools, instructing at least 800 students on salmon life history requirements and watershed needs. The Team also produced and starred in a 45-minute edited video of the project. This is an ongoing program for the Siuslaw Middle School.

The Mapleton seventh grade class, Florence STEP Group and the Mapleton US Forest Service continued a chinook, steelhead cutthroat and coho juvenile trap operation on Knowles Creek in the lower Siuslaw Basin. The objective is long-term monitoring of coho and steelhead populations at a large subbasin scale. This is the sixth year Florence STEP Group has conducted this project. The Mapleton 7th grade class submitted a proposal to their school board for

formation of a Mapleton Stream Team next year. The school board has granted the proposal and the Siuslaw Watershed Council will oversee this project.

Florence area volunteers were primarily responsible for the huge success of the ODFW adult coho and steelhead broodstock collections from the Siuslaw River tributaries. They provided the volunteers for spawning operations, cleaning and building, installation and repair of all the fish traps and weirs during many days of inclement weather. This year they rebuilt the fish weir on West Fork Indian Cr. To monitor adult wild steelhead returns. They also provided details and drawings and purchased a new trap enclosure at Whitaker Cr. After the 10 year old structure collapsed during winter floods.

Five habitat restoration projects were initiated and completed during the reporting period. Volunteers were responsible for loaning equipment, servicing equipment, cabling instream structures and planting and tubing trees for these projects.

Six hundred conifers were planted along the riparian area of Hadsall Creek and Fiddle Creek. Several private landowners cooperated on habitat improvement projects donating time, equipment and personnel to complete instream structures, bank stabilization and riparian improvement projects.

The STEP District completed a dike breaching project on the lower Siuslaw River estuary creating 120 acres of salt marsh wetlands.

During the year a total of 42 adult volunteers contributed 4,880 hours to salmon broodstock collection, egg incubation, rearing, release, and acclimation projects. The Emerald Empire Association of Northwest Steelheaders and Florence STEP Group volunteers assisted ODFW in 1999 with the annual operation and collection of the wild Siuslaw winter steelhead and the Munsel Lake coho broodstocks. Volunteers assisted ODFW daily with the capture of steelhead and coho at one of the five traps operating in the Siuslaw. All adults were transported to Munsel Hatchery for spawning and egg incubation and/or rearing to the fed fry or smolt stage. This year the volunteers were responsible for operation and maintenance of all winter steelhead traps.

The volunteers were very successful in the capture and spawning of the two broodstocks in 1999. The coho production of both 50,000 fed fry to Munsel Lake and 5,000 smolts at 12-per-pound were both easily met. The steelhead broodstock goal of 180,000 eggs was not met due to an outbreak of coagulated yolk disease. Letz Creek and Willamette Hatchery will meet only 50% of the 100,000 smolt production goal.

Two schools participated in 13 classroom egg incubation projects hatching and rearing coho and steelhead to the fry stage. This program reached 120 elementary, middle and high school students with an estimated 600 hours of time donated to operate classroom incubators, fish trapping, spawning, egg incubation and release of their fry, as directed by ODFW.

During the summer of 1998 the Florence STEP Group constructed an artificial spawning channel in Akerly Creek, a tributary to Munsel Lake. This was very successful in providing for naturally spawning coho adults to seed Munsel Lake. The test area is a 3-foot x 15-foot x 40-foot

spawning bar formed with three-inch-minus river-run hard rock. Several tests were conducted to determine optimum adult seeding density to maximize juvenile recruitment.

Southwest Region

Umpqua District

This year the Umpqua STEP program was staffed for the entire year. The number of projects increased from 55 in 1997-98 to 126 during this reporting period. In addition, volunteers donated over 6,000 additional hours. Much of the increase was due to an expansion in youth programs, education, acclimation, and broodstock collection projects. The new Canyonville Acclimation Pond, which was spearheaded and built by the Umpqua Fishermen's Association (UFA) last year, was operational and added greatly to the programs in the South Umpqua basin. Gardiner STEP completed the construction of a new raceway, which considerably improved broodstock holding and handling. The UFA, various students, and a variety of other volunteers helped the Oregon Department of Fish and Wildlife (ODFW) build, install, and monitor a new floating weir trap for the South Umpqua. In addition to the large number of hours donated to the STEP program, several STEP groups and volunteers donated money to "adopt" steelhead for the district's steelhead radio telemetry research project. UFA members also helped the ODFW with a research project to evaluate the survival of unfed coho fry.

Brief project descriptions are provided for major projects within each category.

Youth/Education

Habitat & Surveys: The Umpqua Training and Employment program through the Department of Forestry provided the funding and administration for ODFW to have a crew of 4 youths, and one crew leader for six weeks. This crew did a variety of projects ranging from riparian fencing and vegetation control, to placing spawning gravel, repairing fishways, and modifying fishways to improve hydrology. The crew also helped with the mark-recapture population estimates for Diamond Lake. The Apprenticeships in Science and Engineering (Saturday Academy) program provided funding for an apprentice for 6 weeks. This student assisted post-restoration fish and habitat evaluations on Brush, Paradise, Judd, Whitehorse, and Panther creeks. Spawning ground surveys were conducted by 5 school classrooms. Volunteers coordinated these surveys. Schools are being encouraged to conduct surveys to compare year to year changes on their reach and to provide the students with some hands on field experience.

Training Classes: As part of the Umpqua Basin Watershed Council Education Committee, the ODFW, United States Fish and Wildlife Service (USFWS), U. S. Forest Service, along with several teachers and individuals joined together to host a "Hands On Aquatic Education" day for teachers. The ODFW provided complimentary copies of the new *Stream Scene* to the teachers enrolled, and each teacher earned 8 professional development units. Enrollment was limited to the first 25 teachers, and the session was filled. Inside, teachers were given an overview of the *Stream Scene*, opportunities available at Rock Creek Hatchery, and details about the classroom incubator program. The session then toured a fish trap and several projects developed by local

teachers. The evaluations averaged 4.6 out of 5.0. The teachers felt what they learned and saw would be applicable to their classrooms.

Egg Incubation: Eighteen classrooms participated in the classroom incubator program. Winter steelhead were used to avoid having developing fish during spring break. In addition to the *Eggs to Fry Manual* a teacher volunteer helped the ODFW select a variety of support materials so that teachers could develop better lesson plans about the fish, life cycles and watersheds.

Broodstock Collection/Acclimation/Stocking: In addition to the youth program, 6 students did job shadows for the STEP program. These youths assisted broodstock collection, measurements for acclimation releases, fin clipping at Gardiner, and releasing the otolith marked unfed coho fry. Douglas High School contributed a class of youths to help install the floating weir at Happy Valley. Additionally Glendale High School and Eastwood Elementary have very advanced fish culture programs at their schools and participate in unfed fry releases and some stream inventories.

Information & Education: Most of the educational programs were cooperative field events with other agencies. Tsalila targets the entire Reedsport area 8th grade for stream survey, water quality, macroinvertebrate, mapping, and tribal culture education. High school students are trained in the aforementioned topics to assist staff during the 8th grade days. The Glide Forest tour targets 4th and 5th graders in the Roseburg area for similar topics during a day in the field, as does Camp Myrtle Wood. In addition to field days, 5 career day/fish topic talks reached nearly 200 students.

General Public

Habitat & Surveys: At Gardiner, the volunteers placed spawned salmon carcasses up the North Fork of Smith River per our permit with DEQ. A few volunteers also assisted the basin-wide mass surveys of Brush, Big Tom Folley, Paradise, and Weatherly creeks. Oregon Equestrian Trails members did gill net surveys of high mountain lakes to look at growth rates, age structure, and the presence/absence of trout in various lakes. The presence/absence of herps was also noted to help document the impact of introduced fish on herp populations. Of the 12 lakes stocked with brook trout this year volunteers documented herps at 10 lakes. One lake that had not been stocked in several years had herps, but no remnant trout.

Egg Incubation: UFA members incubated 232,023 coho, 33,004 fall chinook, and 63,850 winter steelhead. Gardiner STEP incubated 46,000 coho and 84,000 fall chinook. During the summer, the UFA repaired the facilities at their major hatchbox site, Cooper Creek. Gardiner developed a formalin treatment system for their egg incubation trays. The Umpqua Fishery Enhancement Derby supported the Gardiner project by approving a grant for $1,250. Gardiner also improved the screens and intake filters for their water system to control sediment loads.

Broodstock Collection: A new floating weir was constructed for tagging and collecting fall chinook in the South Umpqua. Several UFA members, students, and other volunteers helped construct and install the trap. Once installed, volunteers spent several nights per week overnight

at the trap to "guard" the site. They also helped collect brood and tag chinook that were passed. Volunteers used portable tanks to haul broodstock to Rock Creek Hatchery. The Umpqua Fishery Enhancement Derby supported broodstock collection by awarding a grant to build a portable fish tank and a trailer for hauling equipment.

Gardiner received $9,000 in R & E funds to add on to their raceway. The addition is 80-foot long and 16-foot wide. The Gardiner crew spent over 800 hours working on the raceway this summer. They moved dirt, built forms, poured cement, installed the fence, and installed gates. The finished product made fish handling and sorting incredibly easier.

To collect winter steelhead broodstock, seven guides/volunteers donated their hook and line expertise. The guides caught a total of 93 wild winter steelhead which accounted for 36% of the male and 59% of the female brood collected. The guides showed considerable care in handling the fish. Only six fish died for a mortality rate of 6.5%. After capturing the fish the guides worked with another volunteer to transport the fish to the Canyonville Acclimation Pond. During the time period that broodstock were present at Canyonville, volunteers watched the site overnight, and throughout most of the day. Due to the efforts of the volunteers, and through good communication with the local water department and community, the site was never bothered, and enjoyed good local support.

Individual volunteers also helped broodstock collection at a variety of sites such as Canyon Creek, Galesville, and the South Umpqua Falls.

Rearing: At Gardiner, volunteers raised 9,201 coho to smolts and 66,222 fall chinook to pre-smolts. The coho smolts were raised and released on site. Based on the advice of Rock Creek Hatchery, we switched our feeding regime to "satiation" feeding. Thus, we only fed the fish once or twice per week and allowed them to eat as much as they could during the feeding session. This helped all of the fish reach a more uniform size, and allowed the volunteers to cut back on the hours spent feeding fish. We also noticed the fish tended to stay more toward the bottom of the tank rather than rise every time they saw a person.

Rearing was plagued by two major crises. A break in the water pipe to the coho raceway caused the mortality of approximately 16,000 fry that were part of our 2000 smolt releases. This left only 1,500 fry until we received about 6,000 Umpqua coho fry from Butte Falls. With fall chinook, a frog plugged a pipe causing an aeration problem that killed about 27,590 fish during the week we were coded-wire tag the fish. Both problems were modified and repaired. New aeration trays installed in the tanks greatly improved the oxygen level. The site normally suffers some late summer mortality. This year, the coho smolts made it through the summer with very little mortality. In addition to aeration trays, the group is working on the installation of water alarms and has a person living on site.

UFA members reared 31,786 fall chinook to pre-smolts. The fish started at Cooper Creek, then were moved to the Canyonville Acclimation Pond. Since Canyonville has warmer water, the fish were able to grow better for their early June release.

Acclimation: The new Canyonville Acclimation site proved very useful. The site was used to acclimate 10,262 two-year and 17,530 one-year old winter steelhead. UFA and local volunteers staffed the site 24-hours a day during the acclimation period. They also provided a generator to run a trailer and a pump to provide an emergency water aeration system. They fed the smolts and talked to the public, which frequently visited the site. The city water department was very supportive and frequently checked the site and updated staff on any changes in water pressure or quality. Below Galesville Reservoir, UFA members acclimated 71,930 coho in net pens. The coho smolts acclimated at Galesville are part of a mitigation agreement with the county water department.

Gardiner STEP contributes to the terminal fishing opportunity in the Umpqua estuary. Despite the mortality during rearing, Gardiner STEP acclimated 38,632 fall chinook to Winchester Bay. The group posts its feeding times, so the public regularly visits the site at that time.

Information & Education: As a cooperative venture with other agencies and groups, ODFW participated in several free fishing day events and reached over 1,000 people. ODFW was also part of the Tsalila Festival, helped the watershed council set up a display in the mall, and hosted a kids-fish-out-of-the-libration-truck morning at BiMart. I gave 10 professional talks that reached about 150 people and attended as many monthly and STEP board meetings as possible. We did host four "thank you" celebrations for volunteers. These were well attended and fun for everybody--yet cannot even begin to express our gratitude.

Miscellaneous: Numerous volunteers aided the steelhead radio telemetry project through either adopting a fish or helping with radio telemetry. Roseburg High School through a STAC mini-grant contributed 5 transmitters to the project. The students posted updates on the fish and had class contests for fastest, farthest, and longest-lived fish. Monroe Middle School also continued its webpage and interest in the program. Both the Gardiner and UFA groups purchased transmitters for the project, as did individual members. Another volunteer offered his computer expertise to help biologists compile and track data on steelhead. He also donated a laptop to the program and helped streamline the inventory and Winchester Dam data.

At Winchester Dam the North Roseburg Rotary club helped clean out the old building materials and debris. They also pledged to purchase a new fish count sign for the viewing area. Another group, Project Leadership, is trying to raise $80,000 to help renovate the site. Renovations would include structural repairs to the parking lot, stairs, and viewing area, plus interpretive signs.

Spawn/Fin Clip/Stock: The UFA aided Rock Creek Hatchery with spawning nearly every Tuesday. Gardiner conducted spawning on site. Gardiner also fin clipped coho and solicited donations to pay for coded-wire-tags for fall chinook. The UFA received a donation to mark fish, but the number of fall chinook they raised was so small that they opted to not mark this year. We did get them into the production schedule to coded-wire tag chinook in 2000.

Both Gardiner and the UFA successfully stocked their fish. Gardiner released coho smolts on site, and as unfed fry at Scare Creek. Fall chinook were released as unfed fry in Scare Creek and as pre-smolts in Winchester Bay. The UFA released coho fry in the Calapooya basin in Hinkle, Gassy, Coon, and upper Calapooya. They also helped release 200,000 otolith marked unfed coho

fry in Brush Creek. These fry are part of a cooperative study to evaluate the survival of unfed fry. During the spring of 2000 we will start trying to recapture the marked fish as they migrate out. The UFA gave up part of their 1999 egg allocation so that coho could be marked by Rock Creek Hatchery for the project. Rock Creek marked the fish by chilling and heating the water for 48 hour alternating time periods.

Oregon Equestrian Trails members and additional volunteers stocked 22,081 brook trout in 12 of the district's high mountain lakes. Pepsi, which supplied the canisters used to transport the fish, also supported this project. Instead of driving back and forth to La Pine to get fish, the brook trout were transferred to the Canadian troughs at Rock Creek a few days in advance of the stocking. This made transporting fish to various sites much more efficient.

SUMMARY

Over 126 volunteer projects were conducted in the Umpqua District during 1998-99. The projects involved numerous people who donated approximately 21,805 hours. The value of these hours is $311,811. Large donations or grants were used by the District to fund the Youth Conservation Crew, the SAE apprentice program and the Gardiner raceway. In addition the program received additional grants from the Umpqua Fisheries Derby, the STAC mini-grants, and local businesses. The Umpqua Fishermen's Association, Gardiner STEP Program, Oregon Equestrian Trail riders, and North Roseburg Rotary were a major source of volunteers to assist projects. ODFW would like to express its gratitude to all of the volunteers and staff that made the accomplishments listed in Appendix 1 possible!

Tenmile, Coos and Coquille District

Development of the Salmon and Trout Enhancement Program

The primary method of program development is that of obtaining direct citizen involvement in management programs to protect and enhance salmon and trout populations. A total of 179 volunteer projects were conducted in the District using volunteers. A total of 5,225 volunteers were involved in these projects. Volunteers were not only from the general public but were from school and youth programs as well. School groups and youth organizations provide the bulk of the volunteers used in District programs.

A wide variety of projects were conducted. These projects can be classified into four categories. These categories are habitat rehabilitation, stream surveys, fish culture, and information and education projects. The volunteers that have been involved in the District management programs not only have been contributors to protection and enhancement of our salmonid resources but also have gained insight into fisheries management issues that come as a result of direct involvement.

In addition to direct involvement, presentations and tours of enhancement sites provide a vehicle for dissemination of information about the requirements of salmon and trout populations. Presentations to local service clubs or other interest groups are instrumental in promoting conservation awareness and inspiring citizens to become involved in the STEP program. Tours

are also valuable in that they provide an opportunity for the public to see a variety of enhancement projects.

Another method to obtain citizen involvement is the use of the media or reports. Dozens of reports on television and in the newspapers have presented STEP program project. This media coverage provides the greatest possible educational opportunity to the public.

One of the largest citizen involvement projects since the program began continued during the contract period. The construction of the fishway over a series of falls on Fall Creek a tributary of the South Fork Coos River has continued to involve volunteers. This is the third year that volunteers have worked on the project. This fishway has been a huge success. The first year the fishway was constructed over 100 coho were estimated to have used the structure to access habitat where no salmon had previously spawned. Numerous steelhead have also been observed above the fishway. During the summer of 1999, large numbers of juvenile steelhead were observed in surveys. This documented that the fishway continued to be used by salmonids. No coho juveniles were observed above the fishway however. Some important dam-boards are believed to have been missing during the coho migration period that prevented the access.

A second series of falls continued to be modified this past summer on Fall Creek. This second falls is located about four miles upstream from the concrete fishway. The falls was determined to be a partial barrier to salmon and steelhead migration in that only a few fish were again observed spawning above this falls. Volunteers again drilled and chipped a channel through the falls. No blasting was required as the correction was not very large. We are optimistic that this winter salmon and steelhead should be able to pass this falls as easily as they can ascend the fishway.

ODFW volunteers continue to work on the construction of Millicoma Interpretive Center. The model stream that was constructed last year was placed into a building. This building will be the streams permanent location. The building was designed to be a model watershed with a mural painted on the walls to depict various land use activities. The model stream serves as a teaching tool to demonstrate how stream habitat structures function and how to design them. The model stream has been a great addition to the educational program at the facility. This model stream is another great " hands on" opportunity for the visitors at the center.

The Millicoma Interpretive Center also obtained an underwater closed circuit video camera. The acquisition of this camera has been a goal for several years. With the aid of this camera, visitors can get a "fish eye view" of the river and streams around the facility. The camera has become a great teaching tool as it can provide an exceptional "live" view of salmon and steelhead spawning near the facility. Student groups have been thrilled with watching this drama from the comfort of a heated classroom. This camera has become a standard demonstration for all groups that visit the site. Many visitors have come to the facility just to see the camera in operation.

The Millicoma Interpretive Center continues to be a popular place for student groups and others to come and learn more about the life histories of salmon and steelhead. The presentations and demonstrations are not limited to fish however. Many groups are also given aquatic insect presentations as well. Thousands of students come to participate at the facility each year. The

recently constructed incubator room provides an opportunity to view and handle salmon and steelhead eggs and fry at different developmental stages throughout most of the winter months.

Large numbers of volunteers continue to be involved in the extensive fish cultural programs in the District. There are 9 broodstock development, 4 spawning, 17 egg incubation, 7 rearing, and 20 acclimation projects in the District. The fish cultural operations in the District involve the largest number of volunteers in most years. Egg incubation and finmarking of the reared fish demand the largest number of participants.

A total of 5,225 volunteers were involved during the report period in a wide variety of projects. As with many projects, students make up the bulk of the volunteers. Volunteers and Department staff devote a tremendous amount of effort each year providing educational opportunities for youths. These educational programs involving STEP volunteers have occurred for nearly 17 years. Last year parents and teachers were visiting STEP program projects and bringing their children to the same projects they participated in as children themselves.

A total of 21,946 volunteer hours were donated working in the District during the report period. A single volunteer hour is valued at $ 14.30. Based on this hourly figure the contribution to the resource from the District volunteers during the report period is $313,828. In addition to the contribution of time, volunteers also donated $44,200 for support of projects. The total contribution to the District programs during the year was $358,027.

Collect Physical and Biological Stream Survey Information

Stream surveys were conducted on 29 streams during the report period. Stream surveys for adult salmonids were conducted for three purposes. The most common surveys were intended to inventory adult populations. Other adult surveys were conducted to evaluate habitat structures or fish culture programs. The third purpose of the adult spawning surveys was to provide base line information about reaches of streams so that, when subsequent proposed enhancement is conducted, the change in abundance can be potentially documented. There are many additional adult spawning ground surveys that need to be conducted and many more volunteers to do them. The problem is that it takes a great deal of time to supervise these surveyors. Efforts will be made in the future to train volunteers to supervise and coordinate other volunteers to conduct these surveys.

Most of the new surveys were developed to evaluate spawning habitat restoration projects. Some surveys were developed to evaluate hatchery programs. Surveys continued this year in an attempt to evaluate the release of unfed chinook fry into tributaries of Coos Bay. In addition to juvenile surveys adult netting was conducted to also evaluate these releases.

The objective of the juvenile salmonid surveys was to inventory juvenile populations. An inventory of juvenile populations is necessary to determine distribution and abundance. Distribution and abundance data are important in that these are indications of habitat or seeding deficiencies. If a stream was determined to be underutilized by coho or steelhead juveniles then the habitat deficiency or the lack of adult spawners was investigated. If the limiting factor was determined, then in some instances, plans were instigated to correct the problem or seed the stream with hatchbox fry.

The number of juvenile stream surveys conducted by volunteers again increased dramatically over the past year because of renewed interest to identify stream habitat that was not utilized by juvenile salmon or steelhead. Two stream survey training classes were conducted. The purpose of these classes was to instruct additional volunteers to conduct needed stream surveys. Eighteen streams were surveyed to attempt to ascertain whether the stream needed stocking of fry to seed the stream habitat. All of the streams surveyed had suspected habitat limitations such as impassable culverts that reduced or eliminated the natural colonization by salmonids. In nearly all cases the suspected streams had some fish present and were not selected as fry release streams.

Other surveys were conducted in the Coos and Coquille River estuaries to determine the mean-fork-length of juvenile fall chinook at ocean entrance. These surveys are important as a monitoring tool to determine abundance and carrying capacity in those estuaries. Mean-fork-length is an indication of abundance and carrying capacity.

The fall chinook juvenile sampling in the Coquille River estuary was conducted again this year with the assistance of students from Coquille High School. The mean-fork-length of chinook did not vary much from the previous years. The previous year's average length was 13.8 cm.

Spring chinook adults were counted in their resting pools on the South Fork Coquille River again this year. This survey has been conducted each year since 1990 in an effort to evaluate the effect of the hatchery program on the river and to document population size. Below is the table exhibiting the counts during the survey years.

Year	Forest Service Pool	Johnson Mt. Pool	Orchard Park Pool	Total
1990	9	16	8	33
1991	0	10	4	14
1992	12	35	16	63
1993	15	67	8	90
1994	6	14	0	20
1995	8	10	3	21
1996	8	8	2	18
1997	0	10	3	13
1998	4	9	1	14
1999	3	7	1	11

Two formal training workshops were conducted in the District during the contract period. Individual stream surveyors were trained to conduct specific surveys. A total of 30 volunteers were individually trained during the contract period

ODFW personnel 1) trained and supervised volunteers to undertake stream enhancement projects and provided materials for them to do the work, and 2) participated in cooperative projects with federal and state land managers.

A total of six stream enhancement projects were undertaken on six streams. A total of 135 volunteers and students worked on the projects. A total of $5,700 were donated to these projects. The six projects included in-stream structure placement for juvenile rearing, spawning gravel enhancement, riparian vegetation restoration and the fish passage project that was discussed in the first section of this report. One of the largest projects of the report period was the construction of a boulder weir on the West Fork Millicoma River. The West Fork is a gravel poor stream that subsequently has limited spawning habitat, particularly for fall chinook. This was the 12th main river structure that has been constructed to address the limited spawning habitat.

Fish passage was improved by removing logjams, fixing or modifying improperly installed culverts, installing jump pools, or providing passage at impassable barriers. Sill log deflectors and rock-filled wire baskets (gabions) were installed in streams to improve pool/riffle ratios, create adult holding pools or juvenile rearing areas, and trap spawning gravel. Placing large boulders, root wads, and brush bundles in the stream created additional in-stream habitat. Streamside vegetation was improved by plantings, seeding of exposed areas, or fencing to exclude livestock.

STEP Biologists received 23 requests from individuals or groups to participate in the STEP egg incubation program. Region and Division staff reviewed, and approved or rejected, proposals based on management applications. This past year above-normal interest was again generated among the volunteers to increase the number of eggs in streamside incubators. The limitation to these projects was the lack of streams that needed juvenile salmonids stocked into them.

The District STEP Biologist coordinated the collection and distribution of salmon and trout eggs from ODFW hatcheries or STEP incubation facilities to volunteers. As a result, 239,717 fry, 2,049,025 pre-smolts, and smolts were released from the 1998 brood year. For yearling salmon and steelhead a total of 359,237 smolts of the 1997 brood year were released as well. The Fish Culture Division of ODFW tracked the distribution of eggs and required the necessary egg disposition records to be entered into the ODFW hatchery record system. The tracking of such a large fish cultural program is very time consuming for volunteers and agency staff.

About 240 hatchery records were completed and submitted. These records tracked adult, egg, and fry disposition.

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

Volunteers operated a total of 25 rearing or acclimation projects during the report period. Two new steelhead acclimation sites were constructed and will receive steelhead smolts in the spring of 2000. Both new ponds were constructed in the Coquille River basin. One was constructed on the North and South Fork of the Coquille River. These are important additions to the existing steelhead management program in the Coquille River basin. These new ponds will significantly increase angling opportunity from bank anglers in the future.

Volunteers operated a total of 27 rearing and acclimation projects during the report period. Two new steelhead acclimation sites continued to be constructed in the Coquille River basin. These ponds were operational this past spring and acclimated steelhead smolts for the first time. These new ponds functioned very well. These are important additions to the existing steelhead management program in the Coquille River basin. The hope is that these new ponds will significantly increase bank angling opportunities in the future.

The acclimation of steelhead smolts is important to bring these hatchery programs into compliance with ODFW's Wild Fish Management Policy. The purpose of these acclimation sites is to obtain a geographical separation between hatchery and wild steelhead populations. Separating hatchery and wild steelhead is valuable to reduce the potential impacts of the hatchery on wild populations of steelhead. Volunteers now operate ten steelhead acclimation ponds in the District that release a total of 226,000 steelhead smolts annually.

A total of 525 volunteers have been involved in rearing programs in the District. Most of the volunteers' involvement has been provided during fin-marking projects. Nearly 71,105 salmon and steelhead were again marked this year in an effort to evaluate the success or impact of the various release groups.

Broodstock collection and development programs in the District continue to be a success. Large numbers of volunteers have been involved in the ten broodstock collection operations. These projects are very involved. A significant amount of time is donated by volunteers to collect naturally produced salmon and steelhead for incorporation into hatchery programs. The collection of naturally produced salmonids is important to maintain the genetic health of the hatchery populations. The collection of naturally produced salmonids is always very labor intensive. For the past twelve years a significant proportion of the steelhead have been acquired through angler donations. On the South Fork of the Coquille River, all of the steelhead taken for broodstock were obtained through angler donations. Angler donation is a slow, time-consuming, process that involves many volunteers.

The fall chinook broodstock development programs in the Coos River basin are synonymous with the augmentation program conducted in the drainage. Substantial new salmon fisheries have been developed over the past twelve years. Volunteers have attempted to document the contribution of chinook from STEP facilities in the Coos River basin. While the preliminary data indicated that these hatchery chinook were making substantial contributions to fisheries, more data was needed. The Department conducted statistical creel survey in the basin in the fall of 1998. The result of the survey substantiated the previous conclusions. About 42% of the chinook harvested in the basin had their origins at STEP facilities.

More creel work is needed in the future to assess the impact that the District's fish cultural programs have on angling opportunity in the District. Significant angling effort has been concentrated near acclimation sites for salmon and steelhead. These acclimation sites appear to be successful in concentrating anglers and perhaps increasing harvest. These questions need additional evaluation in the future.

Since the STEP program began in the District, attempts have been made to evaluate the various components of the program. One of the frequent questions has been about the success or failure of the unfed fry that are a product of streamside incubators. While conclusive evidence is difficult to acquire, the Fall Creek enhancement project does seem to be one example of success. Since the 1982 brood, both steelhead and coho fry were placed above the falls. For several years documentation of seeding levels of pools demonstrated that the pools were never fully seeded using unfed hatchery fry as the stocked fish. Unfed fry did not achieve the target stocking density, but good numbers of juveniles were present in the stream. Juveniles were produced from the stocking and adults were observed at the base of the falls, but the number of adults produced was never documented. Once the fishway was constructed in the summer of 1997, spawning ground surveys were conducted above the falls. The entire available spawning area was surveyed on a single day. A total of 37 redds were observed above the new fishway. This was a significant observation in that this was the second highest density of coho in the basin. Seeding levels of coho juveniles in 1998 documented that juvenile numbers were good in most pools. We concluded that the unfed fry did produce adults that were successful spawners themselves.

In the summer of 1999 juvenile surveys above the fishway documented the presence of large numbers of young steelhead. Although no coho were observed above the fishway, the project is considered a success. This fall (1999) ODFW will trap and enumerate all coho and steelhead that ascend the fishway. This will be a good evaluation of the continuing operation of the structure.

Stream surveys continue to be an important part of evaluating and monitoring. These surveys are not only important in evaluating fry, fingerling, and smolt releases, but are also important in assessing habitat improvement projects. Twenty-nine stream surveys were conducted by volunteers to evaluate habitat improvement projects or to identify new streams that need stocking.

Stream surveys were also conducted on Blossom Gulch Creek, a small tributary of Coos Bay. Blossom Gulch Creek runs 2,700 feet through a culvert under the city of Coos Bay. Coho have been absent from Blossom Gulch Creek since about 1970. Releases of coho fry into the stream were suspended with the 1995 brood. Both adult spawning and juvenile surveys were conducted to assess the success of the reestablishment of a coho population into the stream. Both spawners and naturally produced coho juveniles have been observed in the stream. The efforts to establish a population into Blossom Gulch Creek appear to be successful at this time.

The health and abundance of chinook populations in the Coquille and Coos River basins are monitored each fall when the juveniles migrate from the estuary to the ocean. Students from Coquille High School assisted in seining the Coquille estuary to monitor not only the abundance,

but also the length of the chinook prior to ocean entrance. The size of juvenile fall chinook prior to ocean entrance is an indication of the population size in the basin. A similar survey was also conducted in the Coos River estuary.

South Coast District

The Freshwater Fish Enhancement and Restoration Program provides funds for the development and implementation of the Salmon Trout Enhancement Program (STEP). STEP was created to enhance salmon and trout resources of the state, while providing an opportunity for citizen involvement in fish enhancement programs. Over the past several years a clear direction for conducting fish enhancement activities has evolved in the South Coast District. That strategy is delineated in the two basin management plans that encompass the District, the South Coast Basin Management Plan (draft) and the Rogue Basin Management Plan (draft). The focus of fish enhancement activities in the South Coast District has been, and continues to be, the protection and rehabilitation of depressed chinook stocks.

STEP projects on the south coast are primarily focused upon broodstock collection of fall chinook. The resulting eggs are incorporated into smolt programs for rehabilitation of populations in lower Rogue tributaries and supplementation of the fall chinook population in the Chetco. The hatchbox program has been reduced substantially in recent years. Smolt projects on Pistol River and Hunter Creek have been completed. Releases of steelhead fry were eliminated after the 1993 brood and only three hatchbox sites were permitted this year: one site for coho in the New River/Floras Basin using eggs from Elk River Hatchery, and two sites using chinook eggs on the Rogue and Euchre Creek. Several habitat projects designed to improve rearing habitat for fall chinook steelhead and cutthroat trout were completed.

The help of citizen volunteers was critical in helping to achieve management goals for protection and enhancement of salmon and trout. Volunteers helped to complete juvenile chinook monitoring programs on the Chetco River, Winchuck River, Pistol River, and Hunter Creek. Volunteers were involved in rehabilitation programs, using lower Rogue River fall chinook stocks, and supplementation of Chetco River fall chinook and winter steelhead. Volunteers also helped supplement natural production of coho in the New River drainage with a hatchbox program using local broodstock.

Presentations were made at 12 meetings of Curry Anadromous Fishermen and 22 meetings of Oregon South Coast Fishermen, Incorporated. Topics discussed were primarily Wild Fish Management Policy, STEP Guidelines, progress of District management programs, habitat problems and solutions, angling regulations, communications between Oregon Department of Fish and Wildlife (ODFW) and angler groups, Restoration and Enhancement funding process, National Marine Fisheries Service listing process and local species affected.

South Coast District STEP put on a display booth at the Curry County Student Science Symposium, a one-day event celebrating student accomplishments in the field of biological science and ecology.

Numerous presentations were given to five newly created Watershed Councils. The purpose of the presentations was to provide information to the public regarding STEP activities and accomplishments. Other information, such as physical and biological survey data, and ODFW restoration priorities were also provided.

There were 44 presentations given to classes at nine area schools. Topics included District activities, fish culture, genetics, life history, fish anatomy, and habitat protection and restoration. Many of these presentations included field trip activities such as releasing salmon fry into local area streams, learning about land uses and local government relationships with salmon habitat, exploring watersheds, etc.

Volunteers conducted approximately 37 hatchery tours. Tours are given to the general public. Approximately 260 people visited the Hatchery to attend these public tours.

The following workshops and conferences were attended by the STEP Biologist to provide additional training used to better inform peers and the public of plans, activities, and accomplishments under STEP:

- Stream Scene Workshop (five days).
- Southwest Region meeting.
- Monthly office safety meetings.
- Annual Fish Biologist meeting
- STAC meeting held in Gold Beach
- Customer Service Training
- Monthly meetings with OSU extension and local Watershed Council Reps.

Presentations outlining South Coast STEP activities were given by the STEP Biologist at the following events:

- Fifth grade Fish and Wildlife Day.
- Oregon Outdoor Women's Conference.
- Lobster Creek 4-H summer youth camp.
- Free Fishing Day at Libby Pond.
- Stream Scene Workshop.
- Alternative Youth Activities Program.
- Gold Beach Boy Scout Troop work party / monthly meeting.

Local newspaper and newsletter articles were written by the STEP Biologist and published on the following topics:

- District position on fishing closures on local fall chinook (Curry Anadromous Fishermen Newsletter).

- Requesting additional volunteers at Indian Creek Hatchery (local newspaper and radio).
- Free Fishing Day (local newspaper and radio).
- Classroom incubator (local newspapers, multiple articles).
- Fry and smolt releases (local newspaper).
- Broodstock collection (local newspaper).
- Habitat project with Boy Scout troop (local paper)
- Fish trap on N. Fork Chetco
- Coy Creek Hatchbox operated by Alternative Youth Activity program

Stream survey information in the South Coast District is rather outdated for many basins.

District priorities for information are:

Floras/New River -	habitat surveys, coho, fall chinook;
Hunter Creek -	habitat surveys, fall chinook;
Winchuck River -	habitat surveys, fall chinook;
Pistol River -	fall chinook;
Euchre Creek -	fall chinook;
Chetco River -	fall chinook.

Our current prioritization of potential habitat projects comes from the South Coast Restoration Guide. This document identifies and summarizes current information related to potential restoration sites. There is a need for further prioritization and more detailed information for specific sites where we plan to conduct restoration efforts over the next several years.

Volunteers are gathering information necessary to undertake a radio telemetry tracking project to outline the adult life history patterns of sea run cutthroat trout in bar bound estuaries of the South Coast. This year volunteers are doing a literature search on sea run cutthroat, as well as researching the telemetry and sonic equipment necessary to undertake such a project, which is expected to be undertaken in the next several years if funding can be located.

Volunteer help was utilized to conduct abundance index surveys of juvenile fall chinook in Hunter Creek, Pistol River, Chetco River, Winchuck River, and Euchre Creek.

In order to better evaluate the effectiveness of the program at Indian Creek Hatchery, a 100% mark rate was imposed. This required the marking of additional 50,000 smolts using Coded-Wire Tags and adipose fin-clips. The 100% mark is scheduled to continue at the Hatchery for three to four years.

Information obtained from returns will be used to determine if modifying the release timing of fall chinook smolts can increase the survival at the Hatchery. The increased mark rate will also help the South Coast Fish District develop a better understanding of the interaction between

hatchery and wild fish in the Lower Rogue. Funding for this program came from ODFW Fish Restoration and Enhancement Program funds.

In an effort to characterize populations of fall chinook on the Chetco River, the Oregon South Coast Fishermen (OSCF) have donated funding and solicited funding from other sources to purchase a downstream migrant trap for use on tributaries of the Chetco River. This year the trap was operated by the OSCF. The South Coast Fish District will utilize information obtained from trapping operations.

Funding to purchase the trap came from the following sources: $5,000 Fish Restoration and Enhancement Program funds, $4,500 Winchuck Rod and Gun Club, $3,000 Oregon South Coast Fishermen (California Oregon Enhancement).

The South Coast Basin Management Plan and the Rogue Basin Management Plan set general priorities for habitat restoration. Priorities are restoration of habitat on Pistol River, Hunter Creek, lower Rogue River, Floras/New River, and Sixes River.

Our current prioritization of potential habitat projects comes from the South Coast Restoration Guide. This document identifies and summarizes current information related to potential restoration sites.

South Coast STEP is also working closely with the Chetco, Hunter Creek, and Port Orford Watershed Councils to identify degraded or destroyed habitat in streams, as candidate sites for restoration projects.

This year South Coast STEP has been working closely with the Lower Rogue Watershed Council to conduct water quality testing in the Port of Gold Beach boat basin. There has been local concern that the conditions in the boat basin may be polluted (thermal and low dissolved oxygen due to stagnant conditions). If so, this has implications for fish usage of the habitat. The Watershed Council has already secured grant money to modify the boat basin if the findings of the research warrant action.

Jack Creek Cooperative Project:

(Note--The groundwork for this project was started in September 1998, work was not completed until October 1998).

- Landowner: South Coast Lumber.
- Total Project Cost: $12,528.
- Logs: 8,000 Chetco STEP, $2,818 South Coast Coordinating Watershed Council**,** $6,000 South Coast Lumber.
- Equipment and Operator: $1,710 South Coast Lumber.
- Location: The project site is on Jack Creek on South Coast property approximately two miles upstream of the confluence with the Chetco River (immediately upstream of the golf course).
- Project seeks to enhance salmonid habitat by placing 12 pieces of large wood into Jack Creek. This wood input will improve spawning habitat and contribute to habitat complexity for over-winter rearing of juvenile salmonids.

Knox Fencing Project:

- Landowner: Scott Knox
- Total Project Cost:
- Materials: posts, wire clips, and railroad ties etc. Were purchased by the Lower Rogue Watershed Council and through a grant from R and E: $470.00 - Lower Rogue, $577.48 R and E. Scott Knox furnished a gate and two rolls of barbed wire, valued at $350.
- Labor: 21 hours Lower Rogue Watershed Council Coordinator
- 107 hours STEP volunteers from the Curry Anadromous Fishermen
- Description: Cattle are located on the West side of Indian creek. By fencing off a ¼ mile section enclosing the Indian Creek Hatchery compound and the area immediately upstream on the west side, cattle access to the stream is effectively blocked off to both sides of the stream for roughly ¼ mile. Below this site the stream is already fenced and upstream of the site a steep gorge blocks access to the riparian zone.
- Project seeks to improve salmonid habitat in a ¼ mile section by excluding livestock from the riparian area so that vegetation can grow to provide cover, bank stability, and improved shading.

Watermen Fencing Project:

- Landowner: Charlie Waterman (Jr).
- Total Project Cost: $13, 000.00
- Materials: $5,000.00 provided by an R and E grant
- Labor: $8,000 provided by the landowner, which was later reimbursed by the local SWCD through U.S. Fish and Wildlife funds.
- Location: Four mile Creek, on the Waterman ranch, 1 miles up Fourmile road, east of highway 101 to South Fork Road. Project starts ¼ mile up South Fork Road and proceeds upstream on Mr. Watermans' property.
- Description: 1.75 miles of stream were fenced. Due to the steep topography in the narrow valley gorge of Fourmile creek on the Waterman ranch, sheep and livestock have only intermittent access to the riparian corridor. The 1.75 miles of fencing should complete exclusion of livestock to 2.75 linear miles of stream. Because Mr. Waterman has sheep he requested woven wire fence as a condition of doing a project on his property. Mr. Waterman has agreed to plant conifers in the riparian zone along his 3.5 mile river frontage in cooperation with the local area watershed council.
- Project seeks to improve salmonid habitat by excluding livestock from the riparian area so that vegetation can grow to provide cover, bank stability, and improved shading.

Deep Creek Christmas Tree Placement Status:

- Working with the local Boy Scout troop leader, I outlined a scout project and set aside a day to work with the troop. Christmas trees that had been collected by the scouts and stored at a lot in town were loaded and hauled to a site on Deep Creek. About 50 Christmas trees were attached to five upstream V structures that are already in place at the site using bailing twine. The structures will provide cover for juvenile salmon and steelhead rearing in the area.

Fish Culture

District priorities for rehabilitation of populations are Lower Rogue fall chinook, Floras/New River coho, and Euchre Creek fall chinook.

Supplementation programs include Chetco River fall chinook, Elk River fall chinook, and Chetco River winter steelhead.

Volunteers assisted with broodstock collection activities on the Chetco River, and lower Rogue River for fall chinook. Volunteers also assisted with collection of winter steelhead on the Chetco River.

Fall chinook broodstock collected from the Chetco River were transported to Elk River Hatchery to be incorporated into a smolt program to supplement the local fisheries.

Winter steelhead broodstock collected from the Chetco River were transported to Elk River Hatchery to be incorporated into a smolt program to supplement the Chetco River sport fishery.

Fall chinook collected in the lower Rogue were transported to Indian Creek STEP facility and the resulting offspring were incorporated into a smolt program for the purpose of rehabilitating the depressed lower Rogue stock. A total of 68,065 fall chinook were reared to smolts by volunteers and released into the Rogue River estuary. Smolts reared at Indian Creek are marked with Coded-Wire Tags to monitor ocean contribution and returns. Excess eggs collected for the smolt program are released as unfed fry. This year 16,563 fall chinook fry were reared at Indian Creek Hatchery and released as unfed fry into Saunders Creek (lower Rogue tributary). Another 21,674 chinook fry were released into Edson Creek, as well as 9,524 into Shasta Costa Creek, and 10,395 chinook fry into Foster Creek for a total of 58,156 chinook fry released from Indian Creek hatchery.

This year local coho broodstock were collected out of Floras Creek. Adults were held and spawned at Bandon Hatchery. The resulting 33,742 eggs were taken to a hatchbox in the Floras/New River Basin. The resulting fry were released into Floras Creek. The directive is to stock identified sites associated with barriers to fish passage, or areas that are otherwise under-seeded. Identified barriers are currently in the process of being removed. STEP directives indicate that sites should be stocked for one life cycle (three years for coho). This is the first year that local brood were used for this program. The program will likely continue for at least two more years. This will complete one life cycle with local broodstock.

A total of 10,000 fall chinook fry were released in Euchre Creek. An existing rehabilitation plan allows the incubation and release of 10,000 fry of Elk River Stock. This program will continue until the status of Euchre Creek fall chinook is determined and a rehabilitation plan is developed. The fry released in 1999 (1998 brood year) were from Elk River stock.

Area schools (Blanco, Driftwood, Euchre, Riley Creek, Azalea, Kalmiopsis, Upper Chetco, and South Coast Christian School) participated in classroom incubator projects in 13 classrooms.

Monitoring and Evaluation.
(Note--information for this section may be duplicated elsewhere in this document.)

Volunteers have been instrumental in helping meet District monitoring objectives.

Governor's Watershed Enhancement Board Monitoring:
All habitat projects within the South Coast Fish District including STEP projects are documented and reported to the Oregon Plan Watershed Restoration Inventory Program. This is a statewide inventory that is administered by the Governor's Watershed Enhancement Board.

Indian Creek Hatchery Monitoring:
In order to better evaluate the effectiveness of the program at Indian Creek Hatchery a 100% mark rate was imposed. This required the marking of additional 50,000 smolts using Coded-Wire Tags and adipose fin-clips. The 100% mark is scheduled to continue at the Hatchery for three to four years.

Information obtained from returns will be used to determine if modifying the release timing of fall chinook smolts can increase the survival at the Hatchery. The increased mark rate will also help the South Coast Fish District develop a better understanding of the interaction between hatchery and wild fish in the Lower Rogue. Funding for this program came from ODFW Restoration and Enhancement funds.

Juvenile Trap Purchased to Monitor Chetco Tributaries:
In an effort to monitor populations of fall chinook and on the Chetco River, the Oregon South Coast Fishermen (OSCF) donated funding and solicited funding from other sources to purchase a downstream migrant trap for use on tributaries of the Chetco River last year. This year the trap was operated in May and June by the OSCF on the North Fork of the Chetco River. Information obtained by the operation of the trap will be utilized by the South Coast Fish District along with screw trap information from other streams in the district. Such information contributes to a database that was used this year to help avoid a listing decision by NMFS for chinook salmon in the Klamath Province. Without this data, listing may have been unavoidable because of a lack of information that would have forced NMFS to take a conservative stance on the issue.

Funding to purchase the trap came from the following sources: $5,000 Restoration and Enhancement Program funds, $4,500 Winchuck Rod and Gun Club, $3,000 Oregon South Coast Fishermen (California Oregon Enhancement).

Estuary Seining:
Volunteer help was utilized to conduct abundance index surveys of juvenile fall chinook in Hunter Creek, Pistol River, Chetco River, Winchuck River, and Euchre Creek.

Deep Creek Monitoring:
Curry Anadromous Fishermen (CAF) volunteers have a particular interest in Deep Creek (tributary to Pistol River). They monitor the instream structures on Deep Creek every winter by walking the stream after major storm events. Volunteers report any damage to structures at CAF monthly meetings. If structures wash out or sustain damage, maintenance work is usually carried out the following summer.

Water Quality Monitoring in the Port of Gold Beach Boat Basin:
Again this year South Coast STEP has been working closely with the Lower Rogue Watershed Council to conduct water quality testing in the Port of Gold Beach boat basin. There has been local concern that the conditions in the boat basin may be polluted (thermal and low dissolved oxygen due to stagnant conditions). If so, this has implications for fish usage of the habitat. Continued monitoring of boat basin conditions follows up last years monitoring effort.

Upper Rogue District

Development of the Salmon and Trout Enhancement Program
Citizen volunteers were involved in a variety of projects to protect and enhance salmon, trout, and warmwater species in the Upper Rogue District. Volunteers participated in a habitat enhancement project at Applegate Lake. They built 8 baffles in a culvert in Cheney Creek that was 86-feet long and 30-feet wide that partially blocked passage to the upper 4 miles of the third most important fish bearing tributary in the Applegate River basin. Volunteers salvaged over 1,861 stranded coho salmon and steelhead. A volunteer maintained a fish screen during the irrigation season. Volunteers were trained to do habitat surveys using a new improved methodology and to record data on the computer in the Access Database. Spring chinook salmon eggs were distributed to classrooms in Josephine County by the Trout Unlimited Chapter in Grants Pass and classrooms in Jackson County by volunteers and students from Crater High School Land Lab.

Volunteers in the West Fork of Evans Creek and Williams Creek planted trees to improve riparian habitat function.

A 12-mile stretch of the Rogue River was cleaned by 29 members of the local Trout Unlimited chapter and a barbecue lunch was provided by ODFW and cooked by TU volunteer Bill Hicks.

A volunteer architecture student developed architectural plans for an ODFW office expansion. He donated over $3,000.00 worth of work and was paid $500.00 by ODFW for S & S.

A total of 22 people volunteered to teach students for the Angler Education program.

Fish Transportation Permits were given to the volunteer-run fish salvage group of the Middle Rogue Steelhead Chapter of Trout Unlimited. Nine volunteers in the Illinois River basin and Trial Creek spent 149.15 hours and drove 633 miles to salvage 1,139 coho, 722 steelhead, hundreds of crayfish, 148 sculpin, and 195 redside shiners.

Three volunteers spent 23.75 hours and drove 93.75 miles maintaining fish screens. Another volunteer spent 8 hours installing a fish screen when screen personnel were short-handed.

Two volunteers spent 14 hours helping ODFW crews do fall chinook salmon spawning surveys. One volunteer spent 16 hours assessing handicap access on all the ODFW owned boat ramps and fishing areas on the Rogue above Grave Creek. Another volunteer posted special regulations at popular trout fishing waters in the district.

A volunteer with computer skills spent 122 hours doing office tasks. Implementation of the Governor's Salmon Restoration program is a high priority item for STEP. The STEP Biologist spent 10 hours/month with the Williams Creek Watershed Council attending meetings, consulting on fish passage and habitat projects, and commenting when necessary on various plans.

Characterization of Fish Populations and Their Habitat in Streams.
Since most of the District's stream survey data were collected in the 1970s, physical and biological surveys are needed to update that information. District priorities for survey data include distribution and status of coho populations throughout the Rogue Basin and habitat surveys to identify restoration opportunities for coho and summer steelhead.

ODFW management personnel applied for grants, received money for seasonal positions, and matching funds and manpower from other agencies to determine distribution and abundance of salmonids in stream systems in the Rogue River basin. Volunteers will again be used when information needs exceed funded efforts.

Habitat Improvement
General priorities for habitat restoration are established by the Rogue Basin Management Plan. District priorities are to enhance spawning and rearing habitat, particularly for coho and summer steelhead, and to improve fish passage at barriers to fish migration. Specific habitat improvement opportunities were identified by habitat surveys conducted by ODFW Aquatic Habitat Inventory Survey crews. ODFW personnel prepared a habitat restoration guide for the basin that lists the best stream reaches for habitat improvement projects.

Members of the Williams Creek Watershed Council and the STEP Biologist are developing a watershed assessment and an action plan for fisheries enhancement projects in the Williams

Creek basin. The STEP Biologist worked with a private consultant to develop habitat improvement projects in Big Butte Creek, a major upper Rogue tributary.

Volunteers participated in a habitat enhancement project at Applegate Lake. The project was funded partially by grants and the US Forest Service. The project targeted both warmwater and trout species in the lake. David Haight, Assistant District Fish Biologist for the upper Rogue District, coordinated the project in conjunction with personnel from the Ashland Ranger District. Four volunteers donated 16 hours to complete the project.

Fish passage was improved at a culvert that was 86-feet long by 30-feet wide one mile up from the mouth of Cheney Creek. The project opened up 4 miles of habitat to chinook, coho, steelhead, and trout at intermediate and high flows. A STAC grant for $750.00 was awarded for hardware and wood supplies to the local Trout Unlimited chapter. Josephine County Public Works donated concrete, traffic control, a porta-potty, and a concrete pump for $945.00. Volunteer hours at $14.30/hour totaled 107 and cost $1,530.00. ODFW hours at $18.00/hour totaled 176 hours and cost $3,168. Lunch, gas, mileage donated by the volunteers and other miscellaneous items brought the total project cost to $6,612.37.

Fish Culture

The District is committed to allow natural colonization of improved habitat and uses hatchboxes only where this does not occur naturally. District priorities for rehabilitation of naturally reproducing salmonid populations were for coho and steelhead in middle and upper Rogue River tributaries. Rehabilitation efforts are directed to streams with under-seeded habitat and are intended to be short-term (one life cycle) projects. We have not identified any under-seeded habitat since the last hatchbox project was completed in 1998.

Over 53 teachers spent 3,975 hours incubating spring chinook salmon eggs in the classroom as a hook to get students interested in environmental education. Because of concerns about Threatened and Endangered Species voiced by the National Marine Fisheries Service (NMFS), the District last year eliminated its coho and steelhead classroom incubator programs and will only offer spring chinook salmon eggs to teachers with classroom incubators in the future. NMFS was concerned that unmarked hatchery STEP fry could be mistaken for wild listed fish. If spring chinook salmon become listed, the District will then change to a trout program, with releases allowed only in ponds and standing waters of the basin. The spring chinook will be released at only two locations on the Rogue River.

A major finding of the Lost Creek Dam Evaluation and a major complaint of fishermen was that hatchery spring chinook raced to the Hatchery while wild fish rested in the river until time to spawn. Most of the harvest came from the wild population. Fishermen were asked to return snouts from fin-clipped spring chinook salmon to determine the success of the net-pen project at delaying returns of spring chinook salmon to Cole M. Rivers Hatchery and providing more of a fishery. A report on findings will be written as soon as the tags from the snouts are read. A spawner survey was run during the fall of 1997 to increase the number of net pen snouts recovered and to determine distribution and abundance of the acclimated net pen fish in the wild spawning population.

Northeast and High Desert Region

Eastern Oregon District

The Eastern Oregon STEP District includes 18 counties and nearly 67,000 square miles. Organized into two ODFW Regions--Northeast and High Desert--it includes eight Fish Districts. In 1983, the first Central Oregon STEP Biologist was assigned to a position in The Dalles. The position now resides in Bend. On January 1, 1997, a second Eastern Oregon STEP position was filled through a temporary job rotation assignment. The new position is funded through September 30, 1999. A second position was established to allow for completion of program development projects. A need was identified to update program and curriculum materials and develop new materials about fish-related issues. The STEP Biologist stationed in Bend coordinates projects for Klamath, Deschutes, Mid-Columbia, La Grande, and Wallowa Fish Districts. The supervising STEP Biologist works from the Southeast District office in Hines. Projects related to statewide program development, STEP projects for Southeast, John Day, and Umatilla Fish Districts are coordinated from that office. The STEP Biologists work closely together in coordinating volunteer activities throughout Eastern Oregon.

During the 1998-99 project year, 2,237 people participated in 159 volunteer in the Eastern Oregon STEP District. Volunteers donated 12,609 hours and more than $14,734 to STEP activities. This translates to more than $180,300.00 when volunteer hours convert to real dollar equivalencies (volunteer time is calculated at *$14.30* per hour, based on national figures).

Development of the Salmon and Trout Enhancement Program
Presentations/Recruitment:
Activities involving schools, teacher education, and general public education about fish populations and their associated habitats continue to be a high priority in this STEP District. Eastern Oregon STEP biologists participated in 37 presentations to schools and organizations, plus numerous one-on-one discussions with individuals. Three club meetings (Bend, Sunriver, and Klamath Falls) were attended for recruitment purposes.

Watershed Workshops: Eastern Oregon STEP participated in two Watershed Education Project workshops during this contract period. Seventy participants from throughout the state experienced the workshop training. *The Stream Scene: Watersheds, Wildlife, and People*, STEP's curriculum package (Second edition recently published), continues to serve as the basis for teaching students about fish and the habitat in which they live. Watershed Education workshops have been taught since 1986. The continued high rate of participation in the program indicates a good return on workshop efforts. Teachers and watershed educators continue to request this level of training.

Classroom Incubators: Schools completed 76 classroom incubator projects during the contract period. Rainbow trout, summer steelhead, and kokanee salmon were available in approved locations in Eastern Oregon for classroom rearing. This program continues to gain in popularity

and is manageable only because volunteers from Central Oregon Flyfishers (Bend, and the Klamath Chapter Trout Unlimited (Klamath Falls) are willing to provide both personnel and monetary support. Two volunteers spent 5 days traveling over 1,000 miles delivering fall rainbow eggs to central and eastern Oregon schools. Other support includes set-up and monitoring of the aquariums, and release of fry. An 'adopt-a-school' program is being developed. Assigned volunteers make regular classroom visits to monitor incubators and provide aquatic education instruction.

Kokanee Karnival: This year's Kokanee Karnival expanded to include 10 Central Oregon elementary schools. The project continues to evolve to accommodate more students and volunteers. In March 1999, a part-time (25 hours/month) Coordinator was hired to help implement the program. Funding for this position is provided through sponsorship donations. Producing partners for the Kokanee Karnival include ODFW, Central Oregon Flyfishers, Sunriver Anglers, Central Oregon Llama Association and Deschutes National Forest. The program successfully connects schools receiving eggs for classroom incubators with wild fish spawning in a stream. The program now spans a two-week period. During the first week, five schools visited the Metolius River and Wizard Falls Hatchery. Week two brought five different schools to Browns Creek and Fall River Hatchery for instruction. Both sites offer close-up viewing of spawning kokanee salmon and a variety of other native flora and fauna. Volunteer instructors use demonstrations and hands-on displays at both the stream and hatchery. Fish stocking, using llamas and helicopters, is demonstrated. A Native American provided insight into salmon heritage with story telling.

The second segment of Kokanee Karnival involves a classroom incubator project. Trout or salmon eggs are delivered to classrooms for incubation during October, November or February, depending on school request. Volunteers make arrangements with schools for aquarium set-up and equipment needs before eggs are delivered.

In April, an angler education clinic was completed with students from the 10 Kokanee Karnival schools at Shevlin Park in Bend. The clinic included three hours of instruction on angler ethics, fishing equipment, fish biology, and angling technique. After the classroom sessions, students enjoy a barbecue lunch before fishing in nearby Shevlin pond.

Schools completed a fourth segment of the Kokanee Karnival program by participating in a community service project. Tree planting and pond cleanup projects were completed.

Approximately 300 students and 50 adult chaperones enjoyed the streamside and hatchery experience. One hundred seventy-seven volunteers contributed 1,357 hours and $1,315.95 to this event. Event sponsors donated more than $10,000.00 to ensure the success of this aquatic education project.

Kokanee Karnival continues to receive exceptional support, both from the volunteer community and our financial sponsors. The 'Karnival' is a tremendous event that pulls together volunteers, school children, public agencies, and sponsors to benefit fish and youth education. Next year the program will expand to 12 schools. A future plan includes development of a Kokanee Karnival Internet Web site.

Fish Biology/Dissection: Fish biology/dissection instruction continues to be popular with local schools. Ninety-eight students (plus teachers) learned the external and internal parts of a salmonid. The class included information on fish adaptation, genetics, life history, coded wire tags, and angling tips. Scales were read with a microscope to determine the age of the fish. Time was spent helping students interpret the Oregon Sport Fishing Regulations.

Time constraints prevented this program from further development. Future plans include development of a script and curriculum for volunteers to take into the classroom. Many schools requested this type of instruction, but because of limited time and resources STEP was unable to fill all requests.

Volunteer Recognition: Service awards and other recognition items were presented to teachers and volunteers at the Kokanee Karnival Critique/Potluck at the Environmental Center in Bend, 12-98. Thirty-two volunteers, teachers and agency staff attended this popular event.

A special community service award was presented to Sunriver Anglers at the Owners Association in Sunriver.

Publications/Training Materials: The Aquatic Habitat Inventory training packet, *Surveying Oregon's Streams: A Snapshot In Time*, was printed and distributed to STEP Biologists and approximately 90 watershed councils in April 1999. The training packet includes: lesson plans, data collection protocols for basic and intermediate habitat surveys, riparian surveys, and photo surveys, plus a slide show and script, training tools, data sheet masters and examples, field reference sheets, quality control checking systems, landowner contact tools, data analysis and interpretation tools (including a Web site), volunteer management tools, several pages of resources (both literature and personnel), and a glossary. ODFW's Aquatic Inventory personnel maintain and update the Web site and have recently posted the entire publication. The Web site will serve as the source of major updates. STEP Biologists will receive a refresher training with this package in December 1999 and we are coordinating with the Oregon Watershed Enhancement Board to provide training to watershed councils in March 2000.

At least two other training packets are high-priority items for development (fish sampling protocols and spawning survey protocols).

The Fish Habitat Restoration brochure was completed in June 1999. Twelve thousand copies were printed and distributed to STEP Biologists and others. Work continues on the habitat project planning sheets (riparian fencing and pasture management, bank stabilization, riparian planting, instream structures, and passage improvement).

The Stream Scene continues to serve as the cornerstone of ODFW's STEP and Aquatic Education programs. It is also the Oregon Watershed Enhancement Board's key watershed education package now supplemented by the Watershed Uplands Scene. It is also an important implementation piece for moving the concepts of the Oregon Plan into the schools.

The new Stream Scene, Second Edition was completed in June 1999. One thousand copies were printed, and distribution through "Creeks and Kids" workshops and with the use of order forms has commenced. All watershed councils in Oregon received a copy of the new publication.

The new 550-page edition includes two new chapters, 15 new activities, correlation with Oregon's education standards, and many more new features.

A classroom teacher from Bend's Pilot Butte Middle School continues to assist with development of the classroom incubator support-material package. A final draft is ready for layout and design. Development of teaching kits to supplement these curricular materials is also under consideration.

Edits have been received for the "Fish Eggs to Fry" manual and revisions are scheduled for completion by January 2000. Work also continues on the fish genetics unit.

Initial contact has been made with volunteers interested in assisting with development of reference-quality aquatic insect collections.

A mock-up of pages for the fish identification booklet was prepared in January 1999. Editing comments were received from members of the Steering Committee. Work on this piece is delayed because of other priorities.

The STEP Biologist assigned to the Hines office also served on the Oregon Watershed Enhancement Board's Education Advisory Committee, primarily assisting with grant application scoring and evaluation.

STEP Conference: No STEP Conference was held during this contract period. The conference is now scheduled on a biannual basis. Bend will host the next conference, May 5-7, 2000. Numerous planning sessions were completed through September 30, 1999. A Conference Coordinator was hired to help facilitate the program. An Internet Web site has been developed to provide information to the public as program planning continues.

Eastern Oregon STEP Internet Web Site: Volunteer opportunities with the Eastern Oregon STEP district were posted on the Internet for recruitment and informational purposes. Numerous inquiries were received by E-mail and telephone for more project information. The Web site is linked to the ODFW main page to increase visibility. The site recorded 1,658 visits from October 1, 1998 through September 30, 1999. The Web site includes general STEP information, the annual report, equipment checklist for overnight projects, thoughts on volunteer management (from a STEP Conference), links to STEP projects in the Eastern Oregon STEP district and media reports that were published in the Bend Bulletin. As Internet use increases, Web pages promise to be an effective tool to involve volunteers in STEP projects and provide pertinent information to the general public. A future goal is to use volunteers to update and maintain the Web site.

Project Proposals/Reports: One hundred fifty-nine STEP activities were documented during this contract period (an increase in 25 percent from last year). The STEP biologists worked closely with each fish district where STEP projects were completed. Reports were finished for all projects directly supervised by the Eastern Oregon STEP biologists and forwarded to appropriate fish districts and research biologists. Copies of the reports were also provided to interested volunteers.

Volunteer statistics for the Eastern Oregon STEP district were provided to the Regional Volunteer Coordinator for the 'Annual Volunteer Report'.

News Releases/Articles: The Eastern Oregon STEP district worked closely with *The Bulletin* newspaper and Z21 (Channel 5) in Bend for media coverage on several STEP projects.

The Kokanee Karnival Coordinator was instrumental in making media contacts to showcase this aquatic education program. Seven articles were written on Kokanee Karnival events during this reporting period.

Project information was also compiled and released to clubs and media (TV and newspaper) for information and recruitment.

Characterization of Fish Populations and Their Habitat in Streams

A major emphasis of the 1998-99 field season was to assist districts with population trend information in the Malheur Lakes and John Day River basins. Additionally, volunteer projects focused on spawning distribution of bull trout in the Metolius, Walla Walla and Malheur rivers. Steelhead spawning surveys were completed on Trout Creek and Bakeoven Creek (Deschutes).

Survey Statistics: During the 1998-99 contract period, 25 surveys were conducted. These surveys included eight spawning surveys, one physical/biological surveys, and 16 fish population surveys. Two surveys included work with warm water fish species. One hundred and sixty volunteers (including students) donated 1,909 hours to gather survey data. More than 230 miles of stream were surveyed. Informal training sessions for new volunteers and safety orientations were completed when and where appropriate.

The appropriate fish district received data sheets and/or completion reports for each survey activity directly supervised by the Eastern Oregon STEP Biologist. Corvallis Research biologists assisted districts with planning and data interpretation from these projects.

Fish Population Survey Highlights: The expanse and isolation of the Eastern Oregon STEP district lends itself to multi-day camping trips to facilitate data collection on remote streams. STEP was instrumental in organizing and participating in several multi-day projects during the contract period. 'Campout' projects draw heavy volunteer participation. Many volunteers use these trips to explore 'new' areas of the state and at the same time, provide valuable assistance to fish district staff.

Middle Fork John Day River: Eleven volunteers spent 353 hours helping district staff collect bull trout population density data from several tributaries of the Middle Fork John Day River. Distribution (upper and lower limits), abundance, size, and age composition information was recorded. A key project objective was to determine whether the bull trout populations of the Middle Fork warrant further study through radio telemetry or other means. The 1999 data is still in the analysis process with some expectation that additional work will occur in 2000.

Little Blitzen River Redband Trout Inventory: Volunteers, along with USFWS personnel, assisted district staff in collecting data to determine the status of redband trout in response to an Endangered Species Act listing proposal. Distribution, abundance, size, and age composition information was noted. BLM, Oregon State University fisheries staff and Oregon Department of Environmental Quality staff also worked in this stream system during 1999. OSU completed fish physiology studies and BLM and DEQ monitored water quality parameters. A winter meeting is planned to share findings and collaborate on other work.

Silvies River Basin Redband Trout Inventory: Eleven volunteers donated 428 hours to collect population data from redband trout in the Silvies River drainage (Malheur Lakes). Distribution, abundance, size, and age composition information was recorded. Data was collected from 53 inventory sites and 37 upper limit designations were determined. Eight of the inventory sites are also part of a special redband trout research effort in Oregon's closed basins. Jeff Dambacher from the ODFW's Aquatic Inventory Project coordinated this portion of the work. Simultaneously, spotted frog toe samples were collected throughout the basin for genetics studies. Phase I of this cooperative effort among ODFW, USFS, USFWS, the Paiute Tribe, and volunteers took place over a two-week period. The large number of participants will insure this project is completed in two years instead of the originally planned three years.

In view of the potential listing of eastside closed basin redband trout, more information about these isolated fish populations is essential. This year's population surveys provided valuable information to district biologists in evaluating fish population status. The projects also give volunteers insight into the difficulties of collecting meaningful data in remote areas.

Further sampling is planned for year 2000 in the Malheur Lakes basin.

Spawning Surveys: Volunteers assisted with bull trout spawning surveys in the Deschutes, Umatilla and Southeast districts. Redds and adult fish were numerated on Metolius River tributaries, South Fork Walla Walla River and North and Middle Forks of the Malheur River and tributaries. Summer steelhead surveys were completed on Trout Creek(Deschutes) and Bakeoven Creek(Deschutes, Mid-Columbia District).

Total bull trout redds in the North Fork Malheur Basin numbered over 100 for the first time in the six years of intensive surveys. Little Crane Creek alone had 30 redds. These increases may be largely attributable to changes in angling regulations. Radio telemetry work and moving the first week of surveys to August have accounted for significant improvements in information gathering in this basin. Efforts to change timing of livestock usage on bull trout spawning streams in the basin are ongoing.

Salvage Projects: For a number of years, volunteers have assisted with annual fish salvage projects in unscreened/screened diversions following de-watering of the canals by local irrigation districts. Volunteers assisted with two salvage projects during this contract period in the Ochoco and Mid-Columbia Districts. Salvaged fish are returned to the streams from which they were diverted. Actual counts, species information, and length frequency data are gathered during these salvage projects.

Culvert Surveys: Eastern Oregon STEP Biologists did not supervise any culvert surveys during this contract period.

Habitat Improvement

Two habitat improvement projects were reported during the 1998-99 contract period. Forty-seven volunteers spent 300 hours on these projects. One riparian planting project was completed on the upper Deschutes River. One fish habitat project (Warm Water Program) was completed in Prineville Reservoir.

Fish Culture

With implementation of the Wild Fish Management Policy, opportunities for supplementing natural production of fish in streams throughout Eastern Oregon have decreased. Most volunteers and Fish District personnel prefer to focus STEP efforts on projects other than fish culture.

Most classroom incubator fry are either released into private ponds without outlets to streams or into water bodies stocked with the same stock of fish.

Hatchboxes: No hatchboxes operated during the 1997-98 contract period in the Eastern Oregon STEP District.

Rearing Project: One egg incubation/rearing project continues in the Eastern Oregon STEP District. The Deschutes Valley Water District project at Opal Springs received 5000 rainbow trout from Oak Springs Hatchery. Fish were reared to 4.5/lb before release into the Crooked River. This production mitigates fish loss from a small hydro project.

Classroom Incubators: Seventy-eight classroom incubator projects were in operation during the 1998-99 contract period. Three conservation clubs continue to assist schools in purchasing needed aquarium supplies and trouble-shooting incubation problems.

Broodstock Collection: Two volunteers assisted Deschutes District staff with rainbow spawning (upper Deschutes River). The "Cranebow" stock is being developed to replace the hatchery stock currently used to supplement upper Deschutes waterbodies.

Spawning/Finclipping/Stocking:

With implementation of the Wild Fish Management Policy, certain fish stocks must be recognizable in the creel. Thirty volunteers spent 216 hours marking fish at Oak Springs and Fall River hatcheries.

Two hundred sixty-one volunteers spent nearly 1000 hours assisting Oak Springs Hatchery personnel with rainbow trout spawning and a variety of other hatchery projects.

Irrigon, Lookingglass, Fall River and Wizard Falls hatcheries used volunteers to assist with hatchery maintenance, fish stocking and rearing projects.

Round Butte Hatchery staff, Trout Creek project staff, High Desert region personnel, OSP troopers and volunteers organized and staffed the fishing pond at the Jefferson County Sports Show in Madras. Several hundred adults and children enjoyed fishing, learning fish biology, knot tying and viewing wildlife displays.

Two major backcountry fish stocking projects were completed during this reporting period. Forty-five volunteers from the Central Oregon Llama Association spent 225 hours packing brook trout fingerling to lakes in the Three Sisters Wilderness. The High Desert Trail Riders horse club (12 volunteers, 96 hours) from Klamath Falls stocked rainbow trout in Blue Lake, Gearhart Mountain Wilderness.

A total of 459 volunteers were used for fish liberation, tagging, rearing, hatchery maintenance activities and education projects during the 98-99 reporting period. 2827 hours were donated to High Desert and Northeast hatcheries and districts for fish culture activities. These hours are in addition to the Hatchery Host Program, documented through the Regional Volunteer Coordinator.

Appendix Table 1.

Summary of STEP Participation
(October 1998 through September 1999)

Category/Activity	Number of Projects	Number of People	Hours Donated	Miles Surveyed	$ Donated	$ ODFW
Youth/Education						
Habitat Improvement	28	412	4,232	2	17,058	11,580
Stream Surveys	71	1,351	5,640	31	6,140	975
Training Classes	69	2,070	2,897	1	12,302	658
Egg Incubation	400	9,896	38,650		31,484	1,874
Broodstock Collect	8	316	1,658		2,750	825
Rearing	10	708	6,577		5,050	950
Acclimation	6	44	1,350		1,380	250
Information Ext.	66	1,788	2,332		2,480	230
Recruitment	3	250	750			
Miscellaneous	14	110	683		1,250	
Spawn/Fin Clip/Stock	6	378	1,743		566	
Subtotal	681	17,323	66,512	33	80,460	17,342
General Public						
Habitat Improvement	82	698	4,037		46,027	12,156
Stream Surveys	169	549	6,613	355	31,242	3,429
Training Classes	28	332	996	1	3,717	706
Egg Incubation	54	498	6,570		8,324	930
Broodstock Collect	25	1,065	13,228		40,644	12,635
Rearing	18	790	8,434		27,949	66,840
Acclimation	36	510	7,393		13,575	18,820
Information Ext.	271	8,467	3,734		8,591	4,158
Recruitment	16	842	2,598			20
Miscellaneous	95	744	4,989		18,572	5,260
Spawn/Fin Clip/Stock	66	1,062	8,024		28,337	528
Subtotal	860	15,557	66,616	356	226,978	125,482
Total	1,541	32,880	133,128	389	307,438	142,824

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