

ANNUAL PROGRESS REPORT

PROJECT TITLE: Salmonid Enhancement and Restoration Management Program

PROJECT NUMBER: F-121-D

SEGMENT NUMBER: 02

PROJECT PERIOD: 1 October 1986 to 30 September 1987

Prepared by: Richard L. Berry

Oregon Dept. of Fish & Wildlife
506 S.W. Mill St.
PO Box 59
Portland, OR 97207

This project was financed in part with funds from the Federal Aid in Fish Restoration Act (Dingell-Johnson/Wallop-Breaux) administered by the Division of Federal Aid of the U.S. Fish and Wildlife Service.

SUMMARY

Job 1. Program development of the Salmon and Trout Enhancement Program.

Objectives:

1. Meet with Salmon and Trout Enhancement Advisory Committee bimonthly to review STEP activities for consistency with ODFW management programs.
2. Make presentations on STEP to citizen groups, schools, and local and state governments. Distribute informational brochures explaining the STEP program.
3. Develop training brochures on how to do various types of stream surveys and how to incubate eggs.
4. Conduct an annual STEP Volunteer Conference to bring together STEP participants to exchange information and ideas on STEP projects.
5. Publish a STEP Volunteer Newsletter on a quarterly basis informing the public of STEP activities.

Accomplishments:

- Objective 1. Seven meetings of the STEP Advisory Committee were held and attended.
- Objective 2. STEP biologists made 150 presentations to citizen groups, schools, and other governmental agencies. STEP displays were presented at local sports shows and county fairs. Over 2,000 brochures on STEP were distributed.
- Objective 3. No new training brochures were developed. Existing brochures were updated and reprinted. A "Pilot Draft" document The Stream Scene - Watersheds, Wildlife and People was developed for use by school teachers and youth group leaders.
- Objective 4. The 1987 STEP Volunteer Conference was held on March 7-8, 1987 in Roseburg, Oregon. Over 265 volunteers attended the conference.
- Objective 5. Only two issues of the STEP Volunteer were published during the period due to heavy workloads in other areas. We distributed over 2,400 copies of each issue.

Job 2. Collect physical and biological stream survey information.

Objectives:

1. Work with district fish biologists and other land managers to identify stream systems or areas where physical and biological stream data and information on fish populations is inadequate.
2. Conduct 10 training sessions to teach volunteers how to conduct physical and biological stream surveys, spawning fish surveys, and compile survey information.
3. Coordinate and supervise volunteer efforts to conduct physical and biological stream surveys and spawning fish surveys on selected streams.

Accomplishments:

Objective 1. STEP biologists reviewed existing records of stream surveys and worked with district fish biologists to identify systems needing updated surveys.

We continued a cooperative effort with the US Forest Service and Bureau of Land Management to develop Anadromous Salmonid Habitat Overviews for coastal streams. Overviews were completed for the Nestucca, Smith (Umpqua) and Chetco river systems. The documents identify habitat enhancement opportunities within each of the basins.

Objective 2. Twelve training sessions were held to train volunteers to conduct physical and biological stream surveys. Ninety-five volunteers were trained and many subsequently undertook stream surveys.

Objective 3. Sixty-two surveys in 33 stream systems were undertaken by volunteers (Attachment 1). Over 228 miles of stream were surveyed and the information provided to management biologists.

Job 3. Habitat Improvement

Objectives:

1. Initiate fish habitat improvement projects on streams or standing waters identified in management programs or plans as in need of habitat improvement.
2. Conduct 10 workshops to instruct volunteers on the various methods to improve fish habitat.
3. Provide technical assistance and materials and supplies to volunteer groups to undertake habitat improvement projects.

Accomplishments:

- Objective 1. One hundred and six stream enhancement projects were undertaken in 47 stream systems (Attachment 1). Most of the work was conducted by volunteers; however, some larger projects were done under cooperative agreements with the US Forest Service, Oregon Dept. of Forestry, Soil Conservation Service, and Oregon Youth Conservation Corps. Over 1,300 volunteers participated in stream enhancement projects and contributed more than 18,000 hours of their time to the work.
- Objective 2. We had planned to conduct specific workshops on stream enhancement techniques; however, we found the subject could best be taught through "on-the-job" training as the volunteers undertook the actual work. STEP biologist's directly supervised most of the stream enhancement projects and were able to instruct the volunteers as the project was undertaken. One portion of the STEP Conference was also used to demonstrate safe enhancement techniques.
- Objective 3. STEP biologists visited each proposed enhancement project site and worked with the volunteers to design and layout the enhancement work. They were also present to assist with the work on most projects. Materials and supplies were provided as needed.

Job 4. Egg Incubation Program

Objectives:

1. Investigate and approve volunteer requests to incubate eggs or rear fish under the STEP program.
2. Plan and coordinate the distribution of eggs from ODFW hatcheries to over 300 STEP volunteer projects.
3. Provide fish culture technical assistance to over 300 citizen volunteers participating in the egg incubation program.
4. Develop volunteer operated broodstock development projects (fish rearing) on selected streams.

Accomplishments:

- Objective 1. We received requests from over 400 individuals to participate in the STEP egg incubation program. The applicant was contacted, the request evaluated for meeting a management need, and, if needed, the site investigated.
- Objective 2. We coordinated the distribution of over 18.4 million salmon and trout eggs from department hatcheries or STEP rearing facilities to volunteers. We worked with ODFW's Fish Culture Division to ensure all eggs were distributed, and necessary forms recording disposition of eggs were included into the ODFW Hatchery Record system.
- Objective 3. Fish culture assistance was provided to 400 egg incubation sites. With many volunteers hatching multiple fish species, eggs were being distributed and incubated from September through May and required considerable monitoring. Hatching success was good and 13.9 million salmon and trout fry were released into underseeded streams.
- Objective 4. Twenty-three rearing projects were operated by volunteers. Nine projects raised fish to full term smolts as part of a broodstock development project, while the remaining sites released fish as fed fingerlings. Returning adults were collected on the Umpqua, Coos and Rogue rivers and at Tenmile Lakes. Close to 1.0 million fed fish (fingerlings or smolts) were released by the volunteers.

INTRODUCTION

The Salmonid Enhancement and Restoration Program is designed to enhance and restore self-sustaining populations of salmon and trout by undertaking habitat improvement projects and supplemental fish stocking programs. Work is conducted by Oregon Department of Fish and Wildlife (ODFW) personnel and by trained volunteers. A major component of the program is training citizens to undertake projects such as stream surveys, habitat enhancement and fish rearing through the Salmon and Trout Enhancement Program, commonly referred to as STEP. STEP is a program whereby citizens volunteer their labor to enhance the fishery resources of the state.

The department's management programs call, in part, for the collection of physical and biological stream survey information, habitat enhancement work, and fully seeding fish rearing areas. Funding through this contract has allowed us to increase our efforts in these areas.

Job 1. Program development of the Salmon and Trout Enhancement Program.

The job objective was to increase public participation in, and develop guidelines for, the Salmon and Trout Enhancement Program (STEP). The objective was accomplished by meetings of the STEP Advisory Committee; presentations to sport groups, schools, and government entities; developing instructional brochures; and the distribution of a STEP Volunteer Newsletter.

Summary of Accomplishments:

The 12 member STEP Advisory Committee, appointed by the Governor, reviews department policies and programs affecting STEP. The Committee met ten times during the contract period. Meetings were held at various locations within the state to allow volunteer groups to discuss their work with the Committee.

Major areas of concern addressed by the Committee were: review of STEP Guidelines; STEP budget, legislation affecting Oregon streams, increased school participation in STEP, project record keeping, and STEP rearing programs. The Committee is reviewing the current STEP guidelines to recommend changes to the Fish and Wildlife Commission.

The STEP program assisted the department's Office of Public Affairs in developing an educational activity guide for teachers and youth leaders. A "pilot draft" titled The Stream Scene - Watersheds, Wildlife and People was developed and distributed for review. A teachers workshop was held at the Hancock Field Station to review the document and provide "hands on" training for twenty teachers. Emphasis of the guide is to incorporate STEP into classroom activities.

The 1987 STEP Volunteer Conference was held in Roseburg, Oregon on March 7-8, 1987. The conference program included sessions on law enforcement, forestry, riparian areas, and education. A unique part of the conference was the use of "round table" discussions allowing participants to discuss a number of issues on an individual or small group basis. "Hands on" demonstrations of equipment used in habitat enhancement were also held. The Umpqua Fishermen's Association hosted the conference. Lyle Earl was selected as "STEP Volunteer of the Year" for his work on the Umpqua River.

Two issues of The STEP Volunteer newsletter were published. The newsletter alerts volunteers of work being done statewide in STEP, activities of the STEP Advisory Committee, techniques for habitat enhancement or egg incubation, and activities in other states. We distributed over 2,400 copies of each issue.

Job 2. Collect physical and biological stream survey information.

The objective was to obtain physical and biological data on fish populations necessary to implement basin management programs. It was accomplished by meeting with district fish biologists and other land managers to identify stream systems where information was lacking; conducting workshops to train volunteers to do surveys; and by coordinating and supervising volunteer survey projects.

Old stream survey records were reviewed and areas identified where surveys have not been conducted in recent years. This information will be used by the district fish and STEP biologists to direct future volunteer survey efforts.

Twelve training sessions were held to train volunteers to conduct physical and biological stream surveys. Sixty-two stream survey projects were undertaken in 33 stream systems by the volunteers. Over 228 miles of stream were surveyed.

Summary of Accomplishments:

A stream survey training class was conducted for the Mayger Fishermen's Association. Participants subsequently submitted a project proposal for surveying Beaver Creek, Clatskanie River.

Volunteers assisted district personnel in conducting winter steelhead spawning surveys on the North Fork and mainstem Salmonberry River (Nehalem R). They also completed individual surveys on NF Salmonberry and Peterson Creek (Nehalem R).

A general survey workshop was conducted for members of the Central Coast Steelheaders. They subsequently surveyed 1.6 miles of the upper Siletz River for spawning spring chinook salmon. They also helped electroshock three tributaries of North Fork Schooner Creek.

General stream survey training sessions were given to the Albany Steelheaders, youth from the Juvenile Justice Alliance, Corvallis Steelheaders, and Siuslaw Youth Employment Program (SYEP) participants.

Volunteers assisted in seining and snorkeling the Winchuck, Chetco, Pistol and Hunter Creek systems to determine juvenile chinook and steelhead abundance, growth rate, and migration rate.

A full day volunteer survey project was completed on Hubbard Creek (Umpqua River). A 30 foot high boulder/log jam was inspected for possible passage improvements. Survey teams above the barrier noted good habitat with some coho and steelhead observed from last year's fry stocking.

Volunteers assisted with a 1.5 mile survey of Deer Creek (Umpqua River) through downtown Roseburg to propose possible fish habitat/stocking projects for Eastwood School. Access points were flagged for a cleanup project coordinated by Douglas County Commissioners.

Volunteers conducted coho spawning fish surveys on French, Big Tom Folley, Waggoner, Mehl, Whitehorse, Lookingglass, Ollala, Cavitt, and Cow creeks (Umpqua River). They also conducted four spawning surveys for spring chinook on 31 miles of the North Umpqua.

The Mt. Hood Independent Steelheaders completed a physical stream survey and spawning fish surveys on the lower 2.1 miles of South Boulder Creek (Sandy River). The surveys were on county and private land and complemented surveys done by the USFS on federal land in the upper watershed.

Juvenile fish sampling was conducted on Salt Creek (MF Willamette River), Battle Creek (Mill Creek), Gate Creek (McKenzie River) and Rickreall Creek (Willamette River). Members of the Oregon Youth Conservation Corps (OYCC) assisted with some of the surveys.

Volunteers assisted with summer steelhead spawning fish surveys on Lost Creek (MF Willamette River) and winter steelhead counts on tributaries of the North Yamhill River.

The Monument High School biology class surveyed 0.25 miles of East Fork Cottonwood Creek (John Day River). They set up photo-points, monitored water temperature, sampled aquatic insects, measured stream flows, and electroshocked a short section of stream. They will monitor stream changes occurring as a result of a newly constructed riparian fence. Maupin High School completed a similar project on Bakeoven Creek (Deschutes River).

Brown trout spawning fish surveys were conducted on Browns Creek (Deschutes River) by the Central Oregon Flyfishers and on Fall River (Deschutes River) by the Sunriver Anglers. Both clubs are cooperating on a joint general survey of Fall River to determine habitat improvement needs.

A juvenile fish survey was completed on Gordon Canyon Creek and lower Harris Canyon Creek (Deschutes River) by students from The Dalles High School. Upstream fish distribution and species composition were determined.

Winter steelhead spawning surveys were completed on 32 miles of Fifteenmile Creek. Counts exceeded those counts taken prior to the time volunteers installed the fishway at the mouth 3 years ago.

Job 3. Habitat Improvement

The objective was to enhance fish passage and rearing habitat. It was accomplished by training and supervising volunteers to undertake stream enhancement projects and providing the materials necessary to do the work.

Sill logs or rock filled wire baskets (gabions) were installed in streams to improve pool/riffle rations, create adult holding pools or juvenile rearing area, and to trap spawning gravel. Rearing and hiding areas for juvenile fish were created by placing large boulders in the stream. Fish passage was improved by removing log jams, fixing or modifying improperly installed culverts, installing jump pools, or providing passage at impassable barriers. Streamside vegetation was improved by plantings, seeding of exposed areas or fencing to exclude livestock.

We undertook 106 habitat enhancement projects in 47 stream systems (Attachment 1).

Summary of Accomplishments:

The Tualatin Valley Chapter of the NW Steelheaders installed three gabions on the SF Wilson River. They also assisted district personnel in rebuilding the Vanderzanden boat slide on the Wilson River.

Winema Christian Camp installed log sills and placed spawning gravel above structures on a tributary of Daly Lake. The habitat work is combined with an active coho egg incubation program.

The Corvallis Chapter of the NW Steelheaders completed a multiple logjam modification project on EF Buck Creek (Siletz River). Two outings were required to modify four obstructions which either impeded or blocked fish access to the upper reaches of the stream.

The Central Coast Chapter of the NW Steelheaders cooperated with several Lincoln City businesses and individuals to complete projects on EF Widow Creek (Salmon River). Eight sill logs, three rock berms, two rearing pools, and five root wads were installed. The work significantly increased the amount of summer and winter rearing habitat. Project cooperators included Oceanlake Sand and Gravel who donated the use of their "Link Belt" track backhoe, and Mr. Gene Kay who donated all of the woody material used in the project.

The Eugene Ikes joined forces with Crow High School on a gabion/gravel placement project on Wolf Creek (Siuslaw River). Two structures were completed and gravel placed into position. International Paper also assisted by improving access to the site and hauling in 40 yds of gravel donated by Delta Sand and Gravel. IP also donated the rock to fill the gabions.

The Eugene Ikes and International Paper Company completed instream enhancement work on Wolf Creek (Siuslaw River). The structures were inspected during high water and all were intact and functioning as intended. A boulder "necklace" installed in mainstem Wolf Creek was particularly effective at reducing velocity and trapping bedload. Boulders and large woody debris anchored in place with Hilti epoxy may well replace gabions as the "structure of choice" in future years.

Volunteers constructed a fish ladder on Ferry Creek (Isthmus Slough, Coos Bay) at an improperly placed culvert. For the first time in over 30 years, coho can now enter Ferry Creek at a wide range of stream flows to utilize some excellent spawning and rearing area above the culvert.

Volunteers combined with members of the Oregon Youth Conservation Corps (OYCC) to construct gabions in the West Fork Millicoma River (Coos River). The Weyerhaeuser Company donated a "980" four-wheel-drive loader to assist in the project.

Volunteers and OYCC workers constructed gabions in Glenn Creek and East Fork Millicoma River. The project was part of the third annual "Adopt-A-Stream" effort sponsored by the Pacific Fishery Enhancement Corporation. In the course of two weeks, 12 large gabions were installed. Over 80 volunteers loaded 100 tons of rock into the gabions!!

Volunteers worked with members of OYCC to complete many habitat improvement projects on Hunter Creek, Chetco River, and Rogue River.

The Rogue Flyfishers completed a fish ladder project on Bear Creek (Rogue River) at the Medford Irrigation Dam at Talent.

The Mid-Rogue Steelheaders completed a cooperative habitat improvement project on Taylor Creek with the Galice Ranger District (USFS). They assisted a contractor with cabling and moving 61 instream log structures into place.

The Smith River STEP 4-H Club completed projects on Bob and Paxton creeks (Smith River). Blast pools and log sills were installed to improve fish access to the upper reaches of the streams.

Several hundred hours of volunteer time was spent over a 4-week period to correct a fish passage problem on the North Umpqua River at Deadline Falls. Due to a combination of low spring flows and some rearrangement of boulders from last winter's flow, spring chinook and steelhead were not able to negotiate the main falls or a side channel. A 100 foot long fish ladder was blasted from bedrock to allow passage on one side of the river and a temporary sandbag ladder was constructed on the other side. Permanent channels will be constructed next year during low flow period.

Trout Unlimited and the Portland Chapter of NW Steelheaders completed habitat work on Crystal Springs Creek (Willamette River). Log and rock weirs were installed to scour pools. The area was also electroshocked to provide baseline data to evaluate the effectiveness of the habitat work.

Considerable work was done at Alder Creek Falls (Sandy River) to improve fish passage. A new high flow channel was constructed and several jump pools were deepened.

The Environmental Learning Center continued it's habitat enhancement work on Newell Creek (Willamette River) on the Clackamas Community College campus. Work included excavation of a side channel, gravel placement, instream structures, and streamside planting.

The Silverton Chapter of NW Steelheaders installed 3 log sills on Butte Creek (Pudding River) with assistance from PGE and a local landowner.

A cooperative project between the Eugene NW Steelheaders and Weyerhaeuser Co. was completed on Little Fall Creek, MF Willamette River. Log sills and gabions were installed to collect spawning gravel.

Members of the Chehalem Chapter of NW steelheaders and Oregon Youth Conservation Corps (OYCC) installed lateral scour logs, log sills, and anchored large woody debris in Coast Creek (S. Yamhill River).

The Albany chapter of the NW Steelheaders and youth from Linn County's Juvenile Justice Alliance program planted cedar, douglas fir and alder trees in a flood devastated area on Washout Creek (Calapooia Creek).

The Corvallis NW Steelheaders planted alder, douglas fir, cedar, grape, and chestnut seedlings on an unstable section of McDowell Creek (South Santiam River).

The Milton Free-Water Steelhead Enhancement Club used railroad ties to baffle a bridge apron on Pine Creek (Walla Walla River) that was creating a velocity barrier for summer steelhead.

The Sunriver Anglers placed 65 cubic yards of gravel into Fall River (Deschutes River) to aid brown trout and kokanee spawning. Several local businesses donated the use of equipment to help move the "mountain" of gravel into the middle of the river.

The Klamath County Flycasters placed 20 cubic yards of gravel into Spring Creek (Williamson River) to benefit the large rainbow migrating out of the Williamson and Klamath Lake to spawn in Spring Creek.

Members of Oregon Trout, local flyfishers, USFWS personnel, BLM fire crew, and ODFW personnel completed a fish passage improvement project on the Blitzen River. Gabions were placed below an irrigation dam to form a downstream V, raise the pool level, and make it easier for redband trout to move up and down the river. Fifteen tons of rock were moved in 6 hours.

Habitat for bull trout was improved on Roaring Creek (Metolius River) by volunteers from Trout Unlimited, Champ Sherman, PGE, ODFW and USFS. Workers added large woody debris of tree tops and root wads along the banks to provide the necessary habitat.

Volunteers from Central Oregon Audubon Society, Central Oregon Flyfishers, and Madras Boy Scouts planted 2,500 trees on Sagebrush Creek (Trout Creek) and Trout Creek (Deschutes River) to provide shade and stabilize the creek banks. The project was done in conjunction with a Bonneville Power Administration (BPA) habitat enhancement project on Trout Creek.

Job 4. Egg Incubation Program

The objective is to enhance populations of naturally produced salmon and trout through the release of fry or smolts. Work was accomplished by using volunteers to incubate salmon or trout eggs and releasing the resultant fish in underseeded streams. Volunteers were also involved in broodstock development programs.

We coordinated the distribution of over 18.4 million eggs to 400 volunteer egg incubation operators. Over 15 million fry were released into underseeded areas or ponded for additional rearing.

Fry releases through STEP, 1986-87. 1/

Species	Coastal Systems	Columbia R System	Total
Chum Salmon	0	112,074	112,074
Coho Salmon	5,136,520	1,189,598	6,326,118
Spring Chinook	396,697	530,054	926,751
Fall Chinook	3,090,717	0	3,090,717
Summer Steelhead	37,775	363,445	401,220
Winter Steelhead	3,140,537	985,396	4,125,933
Cutthroat Trout	332,941	51,786	384,727
Rainbow Trout	0	79,819	79,819
	12,135,187	3,312,172	15,447,359

1/ Includes 1,527,284 fry released into ponds for extended rearing projects.

Twenty-three extended rearing projects were operated. Nine of the sites were used to rear fish to full term smolts in order to have adults return to the facility and provide an egg source for future programs. Adults returned to brood stock collection sites on the Rogue, Umpqua, and Coos river systems and Tenmile Lakes.

Summary of Accomplishments:

Astoria and Warrenton High schools completed fall chinook rearing projects. Astoria released 744 fish and Warrenton 14,500. All fish were fin clipped prior to release.

Volunteers trapped wild winter steelhead on the Trask and Necanicum rivers in an effort to develop a native winter steelhead stock for the STEP egg incubation program on these streams.

The Central Coast Steelheaders completed a spring chinook rearing program with the release of 1,576 presmolts into the Siletz River.

The winter steelhead rearing project on the Siuslaw River released 6,000 presmolts into Lake Creek above Triangle Lake falls.

Members of the Siuslaw-Lake Creek STEP Chapter and Eugene Ikes assisted ODFW in releasing over 600,000 coho fry into six Siuslaw River streams. These streams and their unstocked counterparts constitute the "test" streams for the STEP hatchbox evaluation study being conducted by the ODFW research team.

Coho adults and jacks returned to the Benson Creek STEP facility located on a tributary of Tenmiles Lakes. The facility is developing a native broodstock for local enhancement programs. The 1986-87 adult return was 2.25% of the 3,500 smolts released.

The Priorli Creek STEP facility on Coos Bay had both fall chinook and coho salmon return. The project is a broodstock development program. Adult chinook returned for the first time in 1986-87 and 14 females, 57 males and 85 jacks were trapped. Additional chinook were seined by volunteers in other tributaries in order to obtain enough eggs for all programs. Anadromous Inc., a private hatchery on Coos Bay, donated eggs from their returning adults to aid the program.

During the 1987, over 475,000 fed chinook were released into various Coos Bay tributary streams from STEP rearing projects. Students from Millicoma Junior High School, Marshfield High School's Fish and Wildlife Conservation Class, and North Bend High School's Advanced Biology classes helped mark 308,000 of the fish prior to release.

The 1986-87 adult coho return to Priorli Creek (Coos River) was excellent with 640 females and 450 males captured. Returning adults were from a release of 17,000 smolts in 1985; thus the adult return was over 6% of the fish released. Eggs were taken for Coos River STEP hatchbox program, the STEP hatchbox evaluation program in the Siuslaw River, and private hatcheries. The jack return was poor, indicating a low adult return in 1987-88.

The 1986-87 brood year fall chinook collection program on the Coquille River was the most successful of the past six seasons. Volunteers captured 72 female, 60 male, and 16 jacks and transported them to Bandon Hatchery for spawning. Volunteers also helped collect coho and winter steelhead adults.

The STEP rearing facility on Indian Creek, Rogue River experienced an excellent return of fall chinook. Total returns were 1,813 adults and 475 jacks. Eggs were taken to meet department and STEP program needs. Over 150,000 fed fry and smolts were released from the Indian Creek site during 1987.

Fall chinook brood stock collection and rearing projects were conducted on Floras Creek, Hunter Creek, Winchuck River, Pistol River and Euchre Creek.

Volunteers helped department personnel seine for adult fall chinook on the Chetco River to collect eggs for management programs, including STEP. For the first time in years, enough adults were collected to meet all program needs.

Over 30 volunteers seined spring chinook adults from Soda Springs and Rock Creek to meet STEP egg requests. Forty-one females and 52 males were collected from Soda Springs and transferred to Rock Creek Hatchery. An additional 63 females were captured in Rock Creek.

Over 86,000 fall chinook and 36,000 spring chinook were released from STEP rearing projects in the Umpqua system during 1987.

The coho rearing program at Gardiner Reservoir (Umpqua River) continued to operate as adults and jacks returned to the facility. Total fish returns in 1986-87 were 159 females, 135 males and 26 jacks for a 3% return of the 10,000 smolts released.

The Opal Springs (Deschutes River) spawning/rearing channel project released 14,376 spring chinook presmolts.

Attachment 1. Summary of activities, by major stream system, carried out under Jobs 2, 3, and 4.

	Job 2	Job 3	Job 4	
	Physical & Biological Surveys	Habitat Improvement Projects	Egg Incubation	Brood Stock Devel.
<u>Tillamook STEP Dist.</u>				
Neawana Cr		X		
Lewis & Clark R			X	
Walluski R			X	
Youngs R			X	
Clatskanie R	X		X	
Necanicum R	X	X	X	
Nehalem R	X		X	
Miami R			X	
Kilchis R			X	
Wilson R		X	X	
Trask R	X	X	X	
Tillamook R			X	
Nestucca R			X	
<u>Lincoln STEP Dist.</u>				
Salmon R		X	X	
Siletz R	X	X	X	
Depoe Bay Cr			X	
Yaquina R			X	
Big Elk Cr	X			
Alesea R	X	X	X	
Woahink Cr		X		
Siuslaw R	X	X	X	X
<u>Umpqua & Upper Rogue STEP Dist.</u>				
Smith R	X	X	X	
Umpqua R	X	X	X	X
Upper Rogue R		X	X	
<u>Coos STEP Dist.</u>				
Tenmile Lakes			X	X
Millicoma R		X	X	
Coos R	X	X	X	X
Coquille R		X	X	

Attachment 1. Summary of activities, by major stream system, carried out under Jobs 2, 3, and 4 (continued).

	Job 2	Job 3	Job 4	
	Physical & Biological Surveys	Habitat Improvement Projects	Egg Incubation	Brood Stock Devel.
<u>So. Coast STEP Dist.</u>				
Elk R		X		
Brush Cr		X		
Euchre Cr			X	X
Lwr Rogue R	X	X	X	X
Hunter Cr	X	X	X	X
Pistol R		X	X	X
Chetco R	X	X	X	
Winchuck R		X	X	
Deep Cr		X		
Floras Cr		X		
<u>Lwr Willamette STEP Dist.</u>				
Scappoose Cr	X	X	X	
Lwr Willamette Tribs	X	X	X	
Clackamas R	X	X	X	
Sandy R	X	X	X	
Tualatin R	X	X	X	
<u>Mid & Upper Willamette STEP Dist.</u>				
Abiqua Cr	X		X	
Mollala R		X	X	
Yamhill R	X	X	X	
Mill Cr	X		X	
Rickreall Cr	X		X	
Luckiamute R			X	
Santiam R		X	X	
Calapooia R	X	X		
Mary's R	X	X	X	
McKenzie R	X		X	
MF Willamette R	X	X		
Pudding R	X	X		
Mohawk R		X		
Willamina Cr		X		

Attachment 1. Summary of activities, by major stream system, carried out under Jobs 2, 3, and 4 (continued).

	Job 2	Job 3	Job 4	
	Physical & Biological Surveys	Habitat Improvement Projects	Egg Incubation	Brood Stock Devel.
Mid-Columbia STEP Dist.				
Hood R			X	
Mosier Cr	X			
Deschutes R	X	X	X	X
Umatilla R			X	
Klamath R		X		
Trout Cr		X		
Metolius R	X	X		
John Day R		X		
LK Billy Chinook		X		
Fifteenmile CR		X		
Blitzen R		X		
Threemile Cr	X			

Table 1. Summary of STEP participation in 1987 (Oct. 1986-Sept. 1987).

Volunteer Group	Number of Projects	Number of Participants	Hours Donated	Miles Surveyed
Youth/Education				
Habitat Improvement	10	181	1,383	
Stream Surveys	11	141	585	13.50
Survey Classes	3	30	55	.25
Broodstock Develop.	2	18	64	
Miscellaneous	19	715	3,112	
Total	45	1,085	5,199	13.75
General Public				
Habitat Improvement	91	1,168	16,975	31.50
Stream Surveys	51	242	1,791	181.62
Research Project	3	33	405	
Scale Collection	3	23	150	
Survey Classes	9	65	309	1.50
Broodstock Develop.	44	1,371	15,422	
Presmolt Rearing	10	1,051	6,815	
Smolt Rearing	16	729	12,726	
Hatchbox Program ^{1/}	450	n/a	33,750	
Miscellaneous	21	282	2,521	
Total	698	4,964	90,864	214.62
Grand Total	743	6,049	96,063	228.37

^{1/} Participants not available; hours estimated at 75 per hatchbox site.

Table 2. Fry releases through STEP, 1986-87. ^{1/}

Species	Coastal Systems	Columbia R System	Total
Chum Salmon	0	112,074	112,074
Coho Salmon	5,136,520	1,189,598	6,326,118
Spring Chinook	396,697	530,054	926,751
Fall Chinook	3,090,717	0	3,090,717
Summer Steelhead	37,775	363,445	401,220
Winter Steelhead	3,140,537	985,396	4,125,933
Cutthroat Trout	332,941	51,786	384,727
Rainbow Trout	0	79,819	79,819
Total	12,135,187	3,312,172	15,447,359

^{1/} Fry released into streams or rearing ponds.
