Grande Ronde Habitat Improvement Project:
Joseph Creek and Upper Grande Ronde River Subbasins

Annual Report
by

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A B S T R A C T

On July 1, 1984 the Bonneville Power Administration and the Oregon Department of Fish and Wildlife entered into an agreement to initiate habitat enhancement work in the Joseph Creek subbasin, a tributary of the Grande Ronde River in northeast Oregon. On July 1, 1985 the upper Grande Ronde River and 33 of its tributaries were added to the contract (Contract No. DE-AI79-84BP16614). Titled The Grande Ronde Habitat Improvement Project:Joseph Creek and Upper Grande Ronde River Drainages, Project 84-25, this project's goal is to optimize spring/summer chinook and summer steelhead smolt production within the Grande Ronde River Basin using habitat enhancement measures. This project provides for implementation of Program Measure 703 (C)(1), Action Item 4.2 of the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program and will be done as offsite mitigation for mainstem fishery losses caused by the Columbia River hydro-electric system. Accomplishing this goal will partially mitigate these losses.

All work being done by the Oregon Department of Fish and Wildlife is on private lands and therefore requires that considerable time be spent developing landowner rapport to insure their acceptance of, and cooperation with, the program.

During 1989, five leases were signed which will protect 7.2 miles of stream and 74.4 acres of riparian habitat.

Work undertaken during 1989 included: 1) construction of 4.4 miles of fence, 2) planting and/or seeding 3.0 stream miles of riparian area, 3) doing instream work on 1.0 miles of stream, 4) summarizing habitat inventory data from 5 creeks totalling 16.1 miles, 5) summarizing habitat monitoring transect data for 30 transects, 6) establishing new photopoints and retaking existing project photopoints, 7) monitoring stream temperatures with thermographs, and 8)doing maintenance on 36.6 miles of fence

INTRODUCTION

The Joseph Creek and upper Grande Ronde River subbasins have recently been examined as part of a Grande Ronde basin study undertaken by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Oregon Department of Fish and Wildlife (ODFW). The study, funded by the Bonneville Power Administration (BPA), was designed to "compile, by major drainage, the basic information necessary to identify, evaluate, prioritize, and recommend site-specific solutions to major problems impacting the anadromous salmonid resource and fisheries", and "prepare an integrated overall plan for the study area" (CTUIR, 1984). The identification, priority, and implementation of habitat work within these subbasins represents a consensus among staff from Staff, Tribal, and Federal entities (Tables 1 and 2).

The Joseph Creek subbasin has historically been an excellent producer of summer steelhead, and the upper Grande Ronde River subbasin an excellent producer of both summer steelhead and spring chinook. Unfortunately, summer steelhead redd counts from 1970 through 1984 indicated a severe reduction in numbers of spawning adults returning to these subbasins; returns for the past four years, however, indicate a reversal in this trend (Table 3). Spring chinook redd counts indicate that returns to the upper Grande Ronde River subbasin remain well below those observed in the late 1960s and early 1970s (Table 4). Reasons for declines of anadromous fish during the mid-1970s and early 1980s include:

1. problems with passage at mainstem Columbia and Snake River dams,
2. user demands for the fishery resource, and
3. degradation of spawning and rearing habitat.

Considerable effort and money has already been put into resolving mainstem dam passage problems and controlling ocean and river harvest of these stocks. There are now indications these efforts are resulting in increased numbers of adult summer steelhead, and to a lesser degree spring chinook, returning to their native spawning grounds in lower Snake River tributaries (Table 5).

Observations in the Joseph Creek and upper Grande Ronde River subbasins however, indicate optimum rearing areas for summer steelhead and spring chinook are limited in large portions of these subbasins by degradation or riparian and instream habitats (Noll, 1987). Several factors have contributed to this habitat degradation within project areas. Contributing factors include livestock grazing, farming practices, timber harvest practices, road construction, and stream channelization; livestock grazing and farming practices being the main factors on private lands. The result of this degradation has been loss of shade producing streamside vegetation, thereby causing high summer water temperatures, and destruction of natural pool/riffle ratios which

are necessary for good smolt production. It has been estimated there is currently a 28 percent shade cover over most streams within project areas and, with proper habitat enhancement measures, this can be increased to 70 percent; a 250 percent increase over present shade cover. Installation of instream structures can restore pool/riffle ratios to an acceptable ratio. Therefore, through an aggressive habitat enhancement program, optimum habitats for returning adults and their progeny may be realized.

Table 1. The estimated amount of riparian and instream habitat work needed within the Joseph Creek subbasin by re and in priority order.

Stream	Species Affected	Priority[a]	Miles of Stream			Miles of Riparian Work				Instre Structu	
						Fencing		Planting			
			USFS	Private	Total	USFS	Private	USFS	Private	USFS	Pr
Peavine Creek	Stld	1	8.0	0.0	8.0	4.5	0.0	4.5	0.0	43	
Elk Creek	Stld	2	3.5	5.0	8.5	3.5	5.0	3.5	5.0	25	
Chesnimnus Creek	Stld	3	12.0	8.0	20.0	12.0	8.0	8.0	4.0	60	
Crow Creek	Stld	4	1.0	13.0	14.0	1.0	13.0	0.0	10.0	10	
Swamp Creek	Stld	5	5.0	10.0	15.0	5.0	10.0	2.5	5.0	10	
Pine Cr. System	Stld	6	2.0	20.0	22.0	2.0	18.0	2.0	18.0	10	
Devil's Run Cr.	Stld	7	5.0	0.0	5.0	2.0	0.0	2.0	0.0	10	
Davis Creek	Stld	8	7.0	3.0	10.0	7.0	3.0	4.0	3.0	10	
Butte Creek	Stld	9	0.0	4.0	4.0	0.0	4.0	0.0	3.0	0	
TNT Gulch	Stld	10	2.0	0.0	2.0	2.0	0.0	2.0	0.0	10	
Joseph Creek	Stld	11	0.0	12.0	12.0	0.0	12.0	0.0	12.0	0	
Subbasin Totals			45.5	75.0	120.5	39.0	73.0	28.5	60.0	188	2

Confederated Tribes of the Umatilla Indian Reservation. 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Measures. 92 pp.

[a] Priorities have been changed as per the 1987 Implementation Plan.
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Table 2. The estimated amount of riparian and instream habitat work needed within the Upper Grande Ronde River Subbasin by stream, and in priority order.

Stream	Species Affected	Priority[a]	Miles of Stream			Miles of Riparian Work				Instream Structures	
						Fencing		Planting			
			USFS	Private	Total	USFS	Private	USFS	Private	USFS	Private
Grande Ronde River	Ch,Stld	1	6.0	5.0	11.0	2.0	5.0	1.0	4.0	130	175
Sheep Creek	Ch,Stld	2	7.0	5.0	12.0	1.0	5.0	0.5	2.5	210	175
Fly Creek	Stld	3	6.0	6.0	12.0	1.0	5.0	0.5	3.0	180	180
Spring Creek	Stld	4	5.0	0.0	5.0	1.0	0.0	2.5	0.0	150	0
S.F. Spring Creek	Stld	5	3.0	0.0	3.0	1.0	0.0	1.5	0.0	90	0
N.F. Catherine Creek	Ch,Stld	6	3.0	0.0	3.0	0.0	0.0	0.0	0.0	90	0
McCoy Creek	Stld	7	4.0	7.0	11.0	1.0	7.0	3.0	4.0	120	210
Rock Creek	Stld	8	0.0	6.0	6.0	0.0	8.0	0.0	3.0	0	90
Dark Canyon Creek	Stld	9	1.0	2.5	3.5	0.0	2.5	0.0	0.0	15	38
Meadow Creek	Stld	10	7.0	7.0	14.0	1.0	7.0	0.5	0.5	210	210
Indian Creek	Ch,Stld	11	1.0	5.0	6.0	0.5	3.5	0.0	0.0	30	150
Chicken Creek	Ch,Stld	12	5.0	2.0	7.0	1.0	1.0	0.0	1.0	75	70
Catherine Creek	Ch,Stld	13	0.0	5.0	5.0	0.0	4.0	0.0	0.0	0	150
Beaver Creek	Stld	14	1.5	5.0	6.5	0.0	3.0	0.0	0.0	45	150
Five Points Creek	Stld	15	5.5	0.5	6.0	0.0	0.5	0.0	0.5	165	15
Clark Creek	Ch,Stld	16	0.0	6.0	6.0	0.0	4.0	0.0	3.0	0	180
Little Catherine Cr.	Stld	17	1.0	4.0	5.0	0.0	2.0	0.0	1.5	15	60
Bear Creek	Stld	18	5.0	0.5	5.5	0.0	0.0	0.0	0.0	75	8
Limber Jim Creek	Ch,Stld	19	2.0	0.3	2.3	0.0	0.0	1.0	0.3	30	5
Pelican Creek	Stld	20	3.0	0.5	3.5	0.0	0.0	0.0	0.0	45	8
Peet Creek	Stld	21	2.0	1.0	3.0	0.0	0.0	1.0	0.5	60	30
Little Fly Creek	Stld	22	3.0	2.5	5.5	0.0	0.0	0.0	1.0	90	75
Whiskey Creek	Stld	23	1.0	8.0	9.0	0.0	4.0	0.0	2.0	15	120
Jordan Creek	Stld	24	2.0	8.0	10.0	0.0	4.0	0.0	2.0	30	120
N.F. Limber Jim Cr.	Stld	25	2.0	0.0	2.0	0.0	0.0	0.0	0.0	30	0
McIntyre Creek	Stld	26	2.5	5.0	7.5	1.0	3.0	1.0	5.0	75	150
Waucup Creek	Stld	27	5.0	0.0	5.0	0.0	0.0	1.0	0.0	150	0
Burnt Corral Cr.	Stld	28	6.0	0.2	6.2	0.0	0.0	0.0	0.0	90	4
Lookout Creek	Stld	29	3.5	0.8	4.3	0.0	0.0	0.0	0.0	53	24
Little Dark Canyon Cr.	Stld	30	2.0	0.0	2.0	0.0	0.0	0.0	0.0	60	0
Phillips Creek	Stld	31	0.0	6.0	6.0	0.0	2.0	0.0	0.0	0	180
Gordon Creek	Stld	32	0.0	7.0	7.0	0.0	4.0	0.0	2.0	0	210
Dry Creek	Stld	33	0.0	8.0	8.0	0.0	6.0	0.0	4.0	0	240
Cabin Creek	Stld	34	0.0	3.0	3.0	0.0	2.0	0.0	0.0	0	90
Subbasin Totals			95.0	116.8	211.8	10.5	82.5	13.5	39.8	2,328	3,117

Source: Confederated Tribes of the Umatilla Indian Reservation. 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Measures. 92 pp.

[a] Priorities have been changes as per the 1987 Implementation Plan.
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Table 3. Average [1] summer steelhead spawning ground counts in the Joseph Creek subbasin [2,3], 1966 through 1989.

	Average 1966-69	Average 1970-74	Average 1975-79	Average 1980-84	Average 1985-89	1985	1986	1987	1988	1989
Redds Observed	496	85	26	87	428	463	417	359	442	462
Miles Surveyed	56	54	43	54	48	49	46	47	47	51
Redds/ Mile	8.9	1.6	0.6	1.6	8.9	9.5	9.1	7.6	9.4	9.1

[1] Streams included in the Joseph Creek subbasin summer steelhead spawning ground counts include Butte, Chesnimnus (mainstem, north, and south forks), Crow, Devil's Run, Elk, Peavine, Swamp, and TNT Gulch creeks. All of these creeks, however, may not be inventoried on any given year due to river conditions. This annual variation is reflected in the "Miles Surveyed".

[2] Since the Joseph Creek and Upper Grande Ronde River subbasins are both within the Grande Ronde River basin, it is felt spawning ground trends within the Joseph Creek subbasins are also representative of those within the upper Grande Ronde River drainage.

[3] Summer steelhead spawning ground counts were obtained from Kenneth L. Witty, District Fish Biologist, Wallowa District, Oregon Department of Fish and Wildlife.

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Table 4. Average 1/ spring chinook spawning ground counts in the Upper Grande Ronde River subbasin 2,3,4/, 1967 through 1989.

	Average 1967-69	Average 1970-74	Average 1975-79	Average 1980-84	Average 1985-89	1985	1986	1987	1988	1989 5/
Redds Observed	382	285	117	94	189	132	117	367	290	38
Miles Surveyed	35	27	24	27	31	27	27	45	27	27
Redds/ Mile	10.9	10.6	4.9	3.5	5.9	4.9	4.3	8.1	10.7	1.4

1/ Late 1960's counts are three or four year averages, 1970-1984 are 5 year averages, and 1985-1987 are counts by individual years.

2/ Streams in the Upper Grande Ronde River subbasin spring chinook spawning ground counts include North Fork, South Fork, and mainstem Catherine Creek, mainstem Grande Ronde River, and Sheep Creek.

3/ Spring chinook spawning ground counts were obtained from Duane C. West, District Fish Biologist, La Grande District, Oregon Department of Fish and Wildlife.

4/ 1989 spring chinook spawning ground counts were obtained from Duane West.

5/ The 1989 fish run was very low due to a flood/fire on Tanner Gulch. Estimated 100% mortality.

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Table 5. Counts of returning adult spring chinook and summer steelhead over Lower Granite Dam on the lower Snake River, 1975 through 1989.

Year 17)	Summer Steelhead (June 1 - October 31)	Spring Chinook[1/] (April 1 - June
Annual Counts[2,3,4,5]		
1975	13,523	17,639
1976	20,020	20,475
1977	48,037	38,770
1978	23,565	41,006
1979	20,281	7,539
1980	32,677	6,758
1981	33,234	13,642
1982	63,070	12,746
1983	76,673	10,026
1984	86,448	7,921
1985	102,104	27,737
1986	116,622	32,929
1987	54,055	29,781
1988	72,884	30,419
1989	125,188	14,504

[1] Count includes adults and jacks.

[2] Counts for 1975 through 1984 were taken from the Oregon Department of Fish and Wildlife, Columbia River Management, Columbia River Fish Counts Report. January 1985.

[3] 1979, 1983, and 1984 revisions to the table, and 1985 and 1986 figures were obtained through personal communication with Howard Jensen, Oregon Department of Fish and Wildlife, Clackamas, Oregon. January 26, 1987.

[4] 1987 and 1988 counts were obtained through personal communication with Howard Jensen, Oregon Department of Fish and Wildlife, Clackamas, Oregon. March 1, 1988 and January 23, 1989 respectively.

[5] 1989 counts were obtained through personal communication with Kurt Melcher, Oregon Department of Fish and Wildlife, Clackamas, Oregon, January 18, 1990.

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DESCRIPTION OF STUDY AREAS

JOSEPH CREEK SUBBASIN

The Joseph Creek subbasin constitutes a major subbasin within the Grande Ronde River basin of northeast Oregon. It drains approximately 556 square miles of the 3,950 square mile Grande Ronde River basin and empties into the Grande Ronde River 4.3 miles above the confluence of the Grande Ronde and Snake rivers (Figure 1). Approximately 75 percent of the Joseph Creek subbasin is within the project area. Not included in the project area is lower Joseph Creek in Washington state and the Cottonwood Creek drainage which enters Joseph Creek 4.4 miles above Joseph Creek's confluence with the Grande Ronde River (Figure 1).

Within the project area 120.5 miles of stream have been identified as in need of habitat enhancement; 75 miles on private land and 45.5 miles on National Forest lands (Table 1).

UPPER GRANDE RONDE RIVER SUBBASIN

The upper Grande Ronde River subbasin constitutes approximately 1,622 square miles of the Grande Ronde River basin above the confluence of the Grande Ronde and Wallowa rivers at Rondowa; 81.4 miles upstream from the confluence of the Grande Ronde and Snake rivers (Figure 2). A major portion of the upper Grande Ronde River subbasin, including the mainstem Grande Ronde River and 33 of its tributaries, are within the project area.

Within the project area 211.8 miles of stream have been identified as in need of habitat enhancement; 116.8 miles on private lands and 95.0 miles on National Forest lands (Table 2).

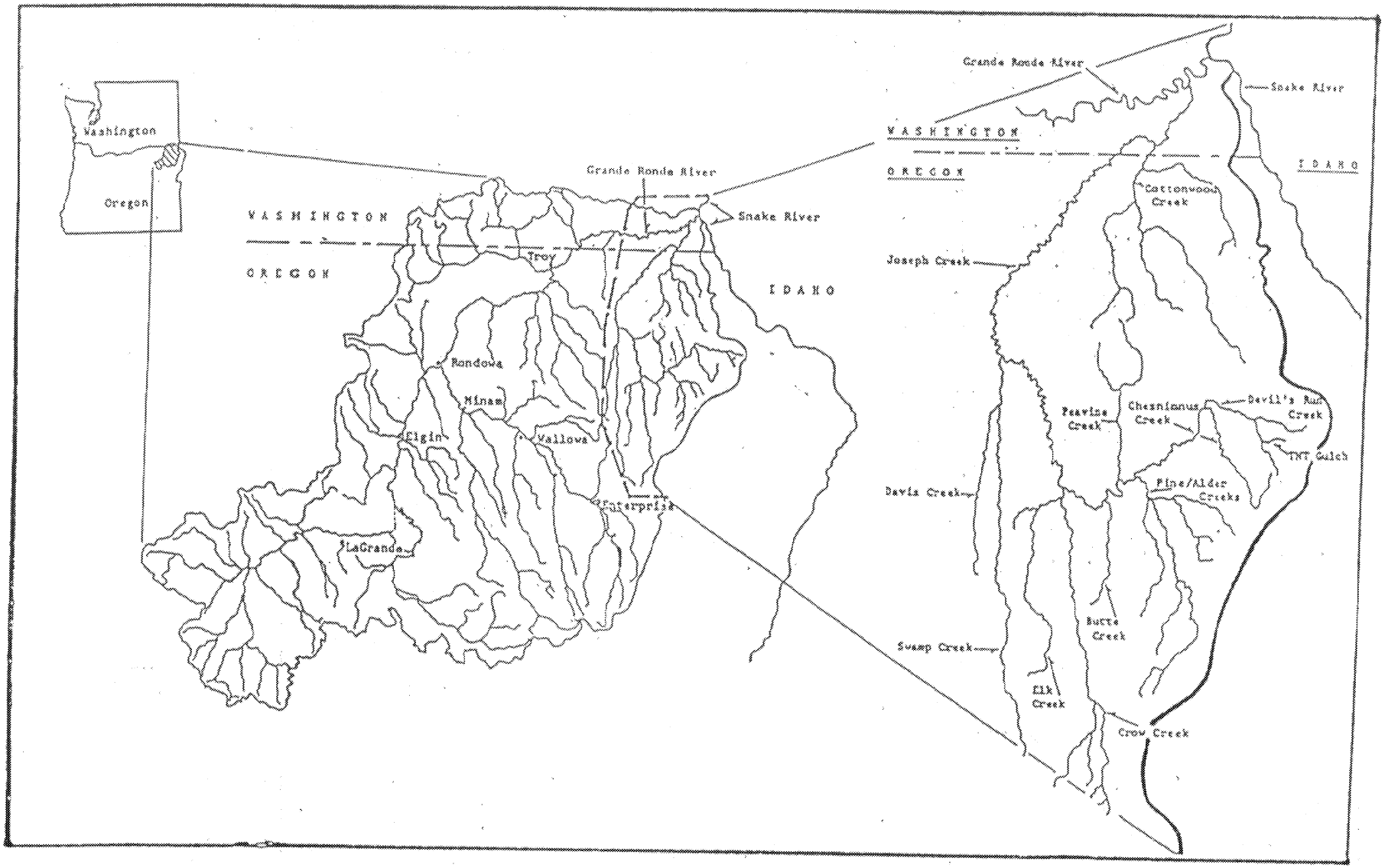

Figure 1. The Joseph Creek Drainage as it relates to the Grande Ronde River Basin of northeast Oregon and southeast Washington.

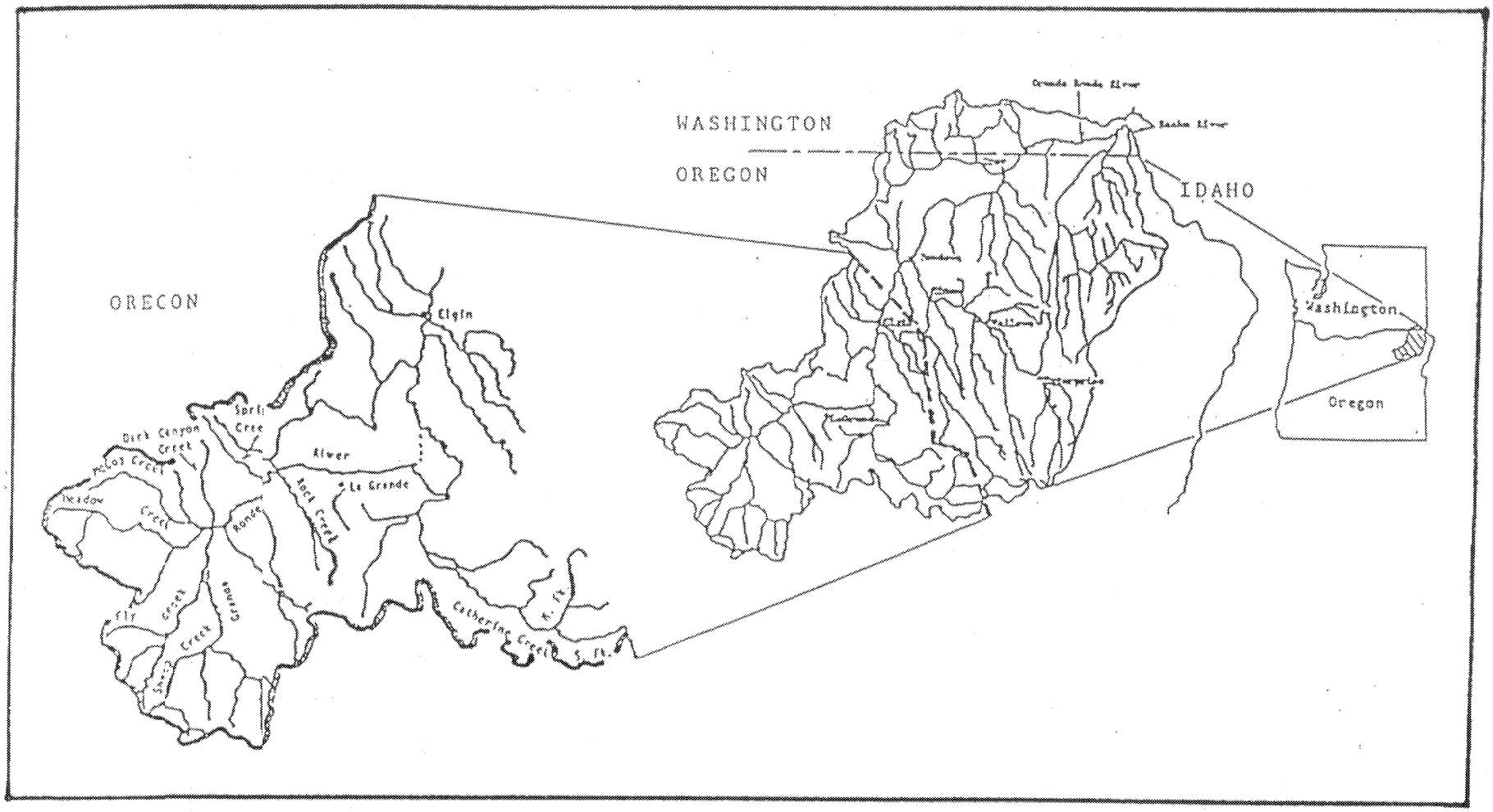

Figure 2 The UpperGrande Ronde River Drainage as it relates to the Grande Ronde River Basin of northeast Oregon.

METHODS AND MATERIALS

The goal of this program is to optimize spring/summer chinook and summer steelhead smolt production within the Grande Ronde River Basin using habitat enhancement measures. To accomplish this goal, work will progress in three phases:

1. planning and preparation (prework),
2. implementation, and
3. maintenance and evaluation.

PREWORK

Prior to actual project implementation the following activities are to be conducted:

Project Planning

Project planning includes design and layout of all work to be done onsite, landowner coordination, development of contracts and contract specifications, and obtaining necessary work permits.

Project Preparation

Prior to signing leases or construction contracts, all lease boundaries and work sites must be identified, staked, and agreed upon by the landowner and/or contractor. Work sites may include easements or right-of-ways, fences, instream structures, offsite water developments, planting, and miscellaneous lease or construction related areas.

Riparian Lease Development and Procurement

Riparian lease development and procurement includes meeting with landowners and/or their legal representatives specifically for the purpose of developing an acceptable lease text, and/or signing lease documents.

Field Inventories

Inventorying of physical parameters (i.e., flow features, substrate type, riparian vegetation, etc.) within riparian areas is necessary to determine which parameters, if any, are in need of restoration or enhancement. Prior to designing or implementing any riparian work, standard physical parameters are measured and evaluated. Data from these inventories are used to help prioritize streams and explain habitat enhancement needs to landowners.

IMPLEMENTATION

Implementation entails the actual on-the-g
program and may include any or all of the

Instream Structures

During late summer and early fall when stream flows are lowest, structures will be installed in streams at locations preselected by fishery biologists and/or hydrologists. Structures of various types will be used to provide optimum pool/riffle ratios, raise riparian water tables, and collect spawning gravels, thereby increasing quantity and quality of rearing and spawning habitats. Rock jetties and deflectors will be the primary structures used to stabilize streambanks. Boulders will be used to create small rearing pools and hiding cover.

Planting

During the early spring, shrub and/or tree species may be planted at preselected locations along streams within project areas. Since high summer water temperature appears to be a major limiting factor, plantings will be made to provide stream shade, thereby reducing summer water temperatures and increasing salmonid utilization of streams. The maximum shade attainable for most streams in project areas is estimated at about 80 percent. The objective of this phase of the program is to reach a minimum of 70 percent shade and have water temperatures of no more than 68F within 20 years of project implementation.

During the fall, areas disturbed while doing implementation activities will be seeded to stabilize soils and discourage weed growth.

Fencing

Destruction of streamside vegetation by domestic livestock has been a major problem within project areas. To provide protection from livestock and thereby promote rapid recovery of existing and planted vegetation, fences will be constructed along riparian zones within project areas.

Photopoint Establishment

Photopoint establishment includes locating and placing permanent markers at sites from which photographs can be taken at regular intervals, thereby depicting riparian changes through time. Also associated with photopoint establishment is development of a photopoint notebook for each project area.

Offsite Water Developments

In an attempt to reduce the number of watering gaps in riparian fences (thereby reducing fence construction and maintenance costs), and to encourage livestock utilization of vegetation away from riparian areas, offsite water sources will be developed.

Habitat Monitoring Transects

Within selected project areas permanent habitat monitoring transects will be established. Specific measurements will then be taken along each transect. These measurements will be repeated at regular intervals and compared with original measurements as a means of quantitatively measuring environmental changes through time.

Miscellaneous Field Activities

Cooperator sign boards denoting riparian enhancement projects as cooperative efforts between BPA, ODFW and private landowners will be installed at high visibility sites along completed riparian enhancement project areas.

MAINTENANCE AND EVALUATION

Postwork entails all maintenance and evaluation of work which has been done within project areas. This phase of the program will usually begin the year following completion of implementation and will continue for several years. Typical postwork activities may include:

Project Maintenance

Following completion of implementation an annual inspection of all project areas will be made. Following this inspection all fence and instream structure maintenance will be done.

Photopoint Picture Taking

Standardized pictures will be taken from preselected photopoints prior to implementation on any project area and then during the spring and fall for two years immediately following completion of a project. Once these initial photos are obtained the frequency of photopoint picture taking may diminish to once every two to three years.

Habitat Monitoring Transect Data

Immediately after establishing habitat monitoring transects, baseline data will be collected. Data collection, following the establishment of baseline data, will be done on the first year following completion of implementation activities and then at approximately 3 to 5 year intervals.

Miscellaneous Field Activities

Thermographs have been installed within and/or adjacent to project areas. These thermographs will then be monitored on a regular basis to detect changes in water temperatures.

RESULTS AND DISCUSSION: I. FIELD ACTIVITIES

It is planned to accomplish habitat enhancement work on private lands in three phases:

1. planning and preparation (prework),
2. implementation, and
3. maintenance and evaluation (postwork).

Activities undertaken during this year were within all phases.

PREWORK

Prework activities are divided into four successive stages:

1. project planning,
2. project preparation,
3. riparian lease procurement, and
4. field inventories.

During this year activities within all four stages were undertaken.

Project Planning

Work done in the project planning stage included: a) design and layout of onsite work, b) landowner coordination, c) developing contracts and contract specifications and d) obtaining work permits.

Design and Layout

Identification of property boundaries for privately owned lands along priority streams in the Joseph Creek and upper Grande Ronde subbasins was the first step in preparation for doing habitat enhancement work. The mapping for the private lands was accomplished in 1988.

Landowner Coordination

Considerable time was spent during the year meeting with landowners in the Joseph Creek and upper Grande Ronde River subbasins. Contacts were in the form of telephone conversations, on-the-ground inspection of proposed project sites, slide presentations, and letters. During these meetings emphasis was placed on meeting fishery needs while at the same time benefiting landowners.

During 1989 ten landowners in the Joseph Creek subbasin and thirteen landowners in the upper Grande Ronde subasin were contacted regarding possible work on their properties.(Table 6).

Table 6. Landowners contacted in the Joseph Creek and Upper Grande Ronde River subbasins, for the purpose of discussing riparian management programs and/or riparian lease development in 1989.

Joseph Creek Landowners	Stream Involved	Upper Grande Ronde Landowners	Stream Involved
McClaran	Adler	Clark	Beaver
Yost	Butte	Shille	Fly, Chicken, Sheep (upper Grande Ronde)
McDaniel*	Butte	Standley	Jordan/Whiskey
Birkmeier	Crow	Mosgrove	McCoy/Meadow
Ostrowski	Crow	Misener	McCoy
Fleshman	Crow	Waite	Meadow
Tielman	Davis	Camp Elkanah*	Meadow
McDaniel*	Salmon	Sherman	Rock
Ketcher	Salmon	Bowman/Hoeft*	Upper Grande Ronde
Childers	Swamp	Delve	Upper Grande Ronde
		Tsiatson	Upper Grande Ronde
		Courtney Standley	Whiskey
		Hampton*	Whiskey
		Abel	Rockpit development

*Leases signed for 1990 construction season.

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Developing Contracts and Contract Specifications

Considerable time during 1989 was devoted to developing contracts and contract specifications for fence and instream structure contracts.

Specifications were developed for one instream structure/fence construction contract for Meadow Creek. Contract specifications for high tensile smooth wire fence were updated once during 1989 and submitted to the ODFW Engineering section for review and inclusion of rock specifications for the Meadow Creek contract. Additionally, bid packages were developed and contracts awarded through the Northeast Region for one fencing General Construction Contract (Crow Creek). Contract development included revising Technical Specifications and Special Conditions sections of the contract as well as drawings, maps, and proposal forms.

A barb wire fence contract for 3.3 miles of fence for Salmon Creek was written and advertised, but was not awarded because of unacceptably high bids. This contract will be readvertised and constructed in the spring of 1990.

A rock pit development contract for Meadow Creek was written and advertised, but no bids were received therefore another rock source was located.

Obtaining Work Permits

A Waiver for instream work on Meadow creek was applied for and received from the Oregon Division of State Lands.

Project Preparation

In preparation for prebid tours, 6.7 miles of fenceline along Crow, Salmon, and Meadow creeks were staked. Most of this was restaked at least once prior to construction due to damage to the staking by domestic livestock between the time of original staking and time of the prebid tour; then again between time of the prebid tour and the commencement of actual construction. Approximately 2 miles of fenceline was staked on one proposed project area for the purpose of developing a lease. The fenceline on Salmon Creek (1.0) mile was also staked prior to construction by the ODFW fencing crew. One mile of fence line on Whiskey Creek (Hampton) was staked for lease negotiations.

Prior to all fence and instream work, three prebid inspection tours were conducted by ODFW personnel.

General construction and preparation of all field equipment and materials needed for implementation activities were completed prior to the 1989 field season.

Riparian Lease Development and Procurement

Two riparian leases were signed in 1989 in the Joseph Creek subbasin, one on Salmon Creek, (McDaniels), and one on Butte Creek, (McDaniels). Three riparian leases were signed in 1989 for the Upper Grande Ronde subbasin: one on the Upper Grande Ronde Mainstem, (Bowman/Hoeft); one on Meadow Creek,(Blue Mountain CBA); and one on Whiskey Creek,(Hampton). Combined with leases signed in 1985, 1986, 1987, and 1988 we now have 30.2 miles of stream and 450.6 acres of riparian habitat leased (Tables 7 and 7a).

A lease was prepared to develop a rock quarry on private land for the Meadow Creek instream contract.

Field Inventories

Data was collected from five thermographs on project areas in the upper Grande Ronde subbasin for the second year; two along Sheep Creek and three along McCoy Creek (Appendix A).

IMPLEMENTATION

Implementation activities undertaken during 1989 were in the instream structure, planting, fencing, photopoint establishment, and miscellaneous field activities categories.

Instream Structures

One instream structure contract was implemented in 1989 on Meadow Creek. Twelve rock jetties were constructed in Meadow Creek for bank stabilization, riparian restoration, edge habitat, and scour pools for rearing juvenile steelhead. Historically steelhead have used Meadow Creek for spawning and rearing.

Planting

The Crow Creek project was planted with 150 Redosier dogwood and 20 Poplar seedlings. In addition 5 Poplar seedlings were planted at the mouth of Pine, Alder, and Salmon Creeks also on the McClaran property.

The Sheep Creek project was planted with 400 Redosier dogwood, 50 Aspen, and 1500 Lodgepole pine seedlings.

The McCoy Creek project was planted with 150 Redosier dogwood and 50 Aspen seedlings.

The plantings were done to enhance and promote the riparian plant community for future shade, bank stability, seed stock, and cover.

Table 7. Completed and proposed projects within the Upper Grande Ronde River Subbasin, 1986-1990.

Upper Grande Ronde River Subbasin

Completed projects, 1986-1989

Creek	Landowner	Acres	Creek Miles	Fence Miles
Fly	Donald & Mary Smith	14.8	1.2	1.8
McCoy	Earle & Dorothy Misener	19.6	1.6	3.1
Meadow	Edward & Vivien Waite	19.7	1.2	1.9
Meadow	Earl & Dorothy Misener	56.8	2.7	5.3
Sheep	Vey	54.7	4.3	5.9
Sheep	BLM	12.8	0.7	0.8
Subtotal		178.4	11.7	18.8
Proposed projects, 1990				
Upper Grande Ronde	Bowman/Hoeff	37.8	1.5	3.0
Meadow	Camp Elkanah	6.6	0.4	0.5
Whiskey	Hampton	15.2	1.0	2.0
Subtotal		59.6	2.9	5.5
Total		238.0	14.6	24.3

mlkF31

Table 7A. Completed and proposed projects within the Lower Grande Ronde River Subbasin, 1985-1990.

Joseph Creek Subbasin

Completed projects, 1985-1989

Creek	Landowner	Acres	Creek Miles	Fence Miles
Chesnimnus	Paul Yost	41.8	3.0	5.4
Elk	Mack Birkmaier	7.7	0.6	1.4
Swamp	Fage Olsen	16.8	2.5	4.4
Swamp	Boise Cascade	48.6	2.6	4.9
Crow	Fleshman	10.5	1.3	2.3
Crow	Buhler	7.4	0.8	1.5
Salmon	McClaran	5.5	0.5	1.0
	Subtotal	138.3	11.3	20.9

Proposed projects, 1990

Salmon	McDaniel	45.5	1.6	3.2
Butte	McDaniel	29.2	2.7	5.2
	Subtotal	74.4	4.3	8.4
	Total	212.a	15.6	29.3

mlkF32

Fencing

Two contracts resulted in construction of 3.4 miles of high tensile smooth wire fence during 1989. Crow Creek in the Joseph Creek subbasin had 1.5 miles of fence constructed and in the Upper Grande Ronde subbasin, 1.9 miles of fence was constructed on Meadow Creek.

A high tensile fence was constructed on Salmon Creek in the Joseph subbasin by an ODFW crew for approximately 1.0 mile as part of the riparian and fish habitat project funded by BPA.

A barb wire fence contract was prepared, layed out, and advertised for 3.2 miles of fence on Salmon Creek in the Joseph subbasin, but was not constructed because of unacceptably high bids. This contract will be readvertised and constructed in the spring of 1990.

A 1500 foot section of electric wire was added on to the existing fence on the Sheep Creek, (Vey) property by ODFW personnel to prevent a large strain of cattle from jumping the existing corridor fence.

An additional animal crossing/watering gap was constructed on the McCoy Creek (Misener) property by ODFW personnel for livestock movement and pasture rotation. An additional crossing was constructed on Sheep Creek.

Photopoint Establishment

Eight new photopoints were established to complement existing ones on Meadow Creek in the upper Grande Ronde subbasin. All photopoints were marked with a steel post and metal identification tag.

Photopoint notebooks were updated for all project photopoints.

Miscellaneous Field Activities

Signs denoting riparian project areas as a cooperative effort betwen BPA, ODFW, and private landowners were placed on the riparian fences on Meadow Creek and McCoy Creek in the upper Grande Ronde subbasin and Salmon and Crow Creeks in the Joseph Creek subbasin.

One hundred and eighty additional bird houses were installed along the Meadow Creek project.

Inventories of fish were sampled by electroshocking in the Sheep Creek and McCoy Creek drainages in the Upper Grande Ronde subbasin in 1989 (Appendix B).

MAINTENANCE AND EVALUATION

Project Maintenance

Inspection of project fence was done for 18.3 miles of fence in the Joseph Creek subbasin and for 17.1 miles of fence in the upper Grande Ronde subbasin for a total of 35.4 miles of fence. Major maintenance occurred throughout the entire project primarily due to high spring run off and ice flows. Ice caused major damage to creek cross fences throughout the project. Table 8 lists by subbasin, creek, miles inspected and/or maintained, and type of maintenance required for both fence and springs.

Table 8. Program maintenance and inspection performed on the Grande Ronde River Subbasin projects in 1989.

Joseph Creek Subbasin

Creek	Miles	Maintenance Type
Chesnimnus	5.1	creek X fences, gen.fence, trees
Crow	2.0	gen.fence, spring box
Swamp	9.5	creek X fences, gen. fence, tree, spg. tank
Elk	1.7	gen. fence

Upper Grande Ronde Subbasin

Creek	Miles	Maintenance Type
Meadow	5.4	gen. fence, creek X fences
McCoy	3.0	gen. fence, creek X fences
Fly	1.7	gen. fence
Sheep	7.0	gen. fence

Photopoint Picture Taking

Pictures were taken during the spring and fall at photopoints established prior to 1989 and on new, (1989), projects.

Habitat Monitoring Data Collection

Transect data for McCoy Creek, A 1-20 and B 21-33 was recalculated, edited, and entered onto the computer. Correspondance was continued with an OSU statistian regarding the transect stastical analysis program.

Inventory data (stream surveys) for Beaver, Chicken, Clark, Davis, and Little Fry creeks was summarized (Appendix C).

Data was collected from thermographs in Sheep and McCoy Creeks for the second year. Data summaries are contained in Appendix A. The data sets were compared with last years data sets and no conclusions can be drawn from just two years of data. Additional years of data sets will be collected to document temperature reductions and/or other changes in the study streams.

Miscellaneous Field Activities

An annual breeding bird survey along the leased riparian habitat area of Swamp Creek was conducted by ODFW district personnel in July (Appendix D).

Spraying of primary noxious weeds within the leased riparian habitat area along Chesnimnus Creek was completed.

Instream structures on Sheep and McCoy Creeks were observed and photographed during the high spring flows. After two years Sheep Creek has experienced a 37% structural failure rate on log deflectors. These structures failed because they were not keyed in with rip rap as it was unavailable.

RESULTS AND DISCUSSION II. ADMINISTRATION

ADMINISTRATIVE

Administrative activities during 1989 included preparation of reports and data summaries, budgets and purchasing, program development, supervision of personnel, and contract administration.

Reports and Data Summaries

Monthly and annual progress reports for the Joseph Creek and upper Grande Ronde subbasins were prepared and submitted to BPA.

Information pertinent to the 1990-1991 Work Statement and budgets were submitted to the Region for document preparation.

Daily contract inspection reports were completed for all work done on Crow, and Meadow creeks fencing and rock projects.

A project description was written and submitted to the Union County Soil and Water Conservation District for inclusion in their annual newsletter.

Habitat inventory data from Clark, Little Fly, Beaver, Chicken, and Davis creeks was summarized (Appendix C).

The thermograph data was summarized using a program developed by the C.T.U.I.R. on Lotus 1,2,3. A Harvard Graphics program was used to develop the thermograph data in a graphic format (Appendix A).

Electroshocking and biological data was collected and summarized for the second year on McCoy and Sheep Creeks (Appendix B).

Technical assistance was provided for a newspaper article that appeared in The Observer, on October 17, 1989 regarding the Grande Ronde project (Appendix E).

Budgets/Purchases

Considerable time was spent obtaining bids, purchasing and/or receiving shipments of materials for fence construction, and instream structure work. Bids were received on three fence materials contracts, materials contracts, and several miscellaneous purchasing orders for instream structures. Additionally, all capitol items were purchased.

Program Development

A computer graphics program was developed for the thermograph computations.

ect computer program was fine tuned and completed in

Personnel

Mr. William Noll, the project biologist took a temporary assingnment with the USFS from February 1, 1989 through August 31, 1989. During this time Mr. Timothy Bailey was reassigned into this position.

Upon returning to the Grande Ronde project Mr. Noll was reassigned on September 15, 1989 to replace Mr. Steven Williams, the NE Regional Habitat Coordinator, who was reassigned to the Assistant Regional Supervisor for NE Region.

Mr. Timothy Bailey, the project technician was reassigned to the Umatilla basin BPA habitat project on October 1, 1989 for the remainder of the year. On January 1, 1990 Mr. Bailey was reassigned as the Umatilla project biologist.

Seasonal/temporary employees were hired to assist with project implementation activities between January 1, 1989 through August 31, 1989.

Contract Administration

General Construction contracts were administered by project personnel during 1989. Two general construction contracts for construction of riparian fences, and one contract for installation of instream structures were completed. During fence construction, ODFW personnel spent considerable time doing onsite contract inspections and administration, and assisting contractors with materials handling.

INTERAGENCY COORDINATION/EDUCATION

INTERAGENCY COORDINATION

Several tours of project areas in both the Joseph Creek and upper Grande Ronde subbasins were conducted. Tours included personnel from BPA, ODFW and USFS.

A slide presentation was given to the Union County SWCD showing the projects on Meadow and McCoy Creeks.

An onsite meeting with a private landowner and the District Conservationist (SCS) was held for lease negotiations.

A tour of project work was conducted for the Union County SWCD director and ODFW regional staff.

Union County and Wallowa County SWCD monthly meetings were attended by ODFW project personnel.

EDUCATION

The following educational activities were undertaken with various childrens groups during 1989:

1. A Baker fifth grade class was instructed on riparian areas and their importance to the fish and wildlife resources.

2. A LaGrande first grade class was instructed on riparian areas and their importance to the fish and wildlife resources.

3. A 4-H group was instructed on riparian areas and their importance to the fish and wildlife resources.

4. An Imbler High School advanced biology class was instructed on physical and biological monitoring techniques and the value riparian areas for watershed, and multiple resource uses.

ml8PA-ANN.89

LITERATURE

Confederated Tribes of the Umatilla Indian Reservation. 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Measures. 92 pp.

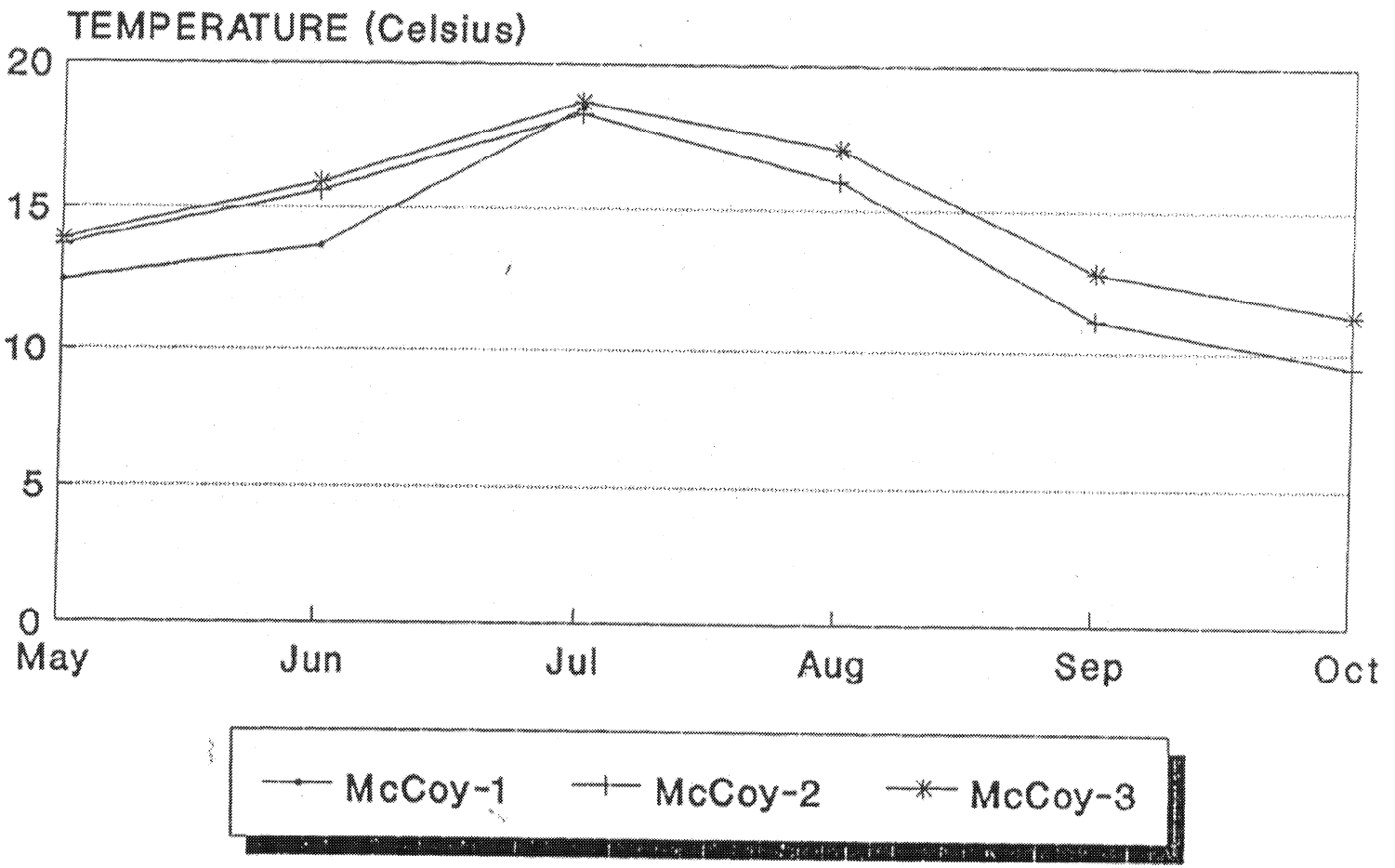
Noll, William T. et. al. 1987. Grande Ronde River Basin Fish Habitat Improvement Implementation Plan. 29 pp.

APPENDIX A

THERMOGRAPHS

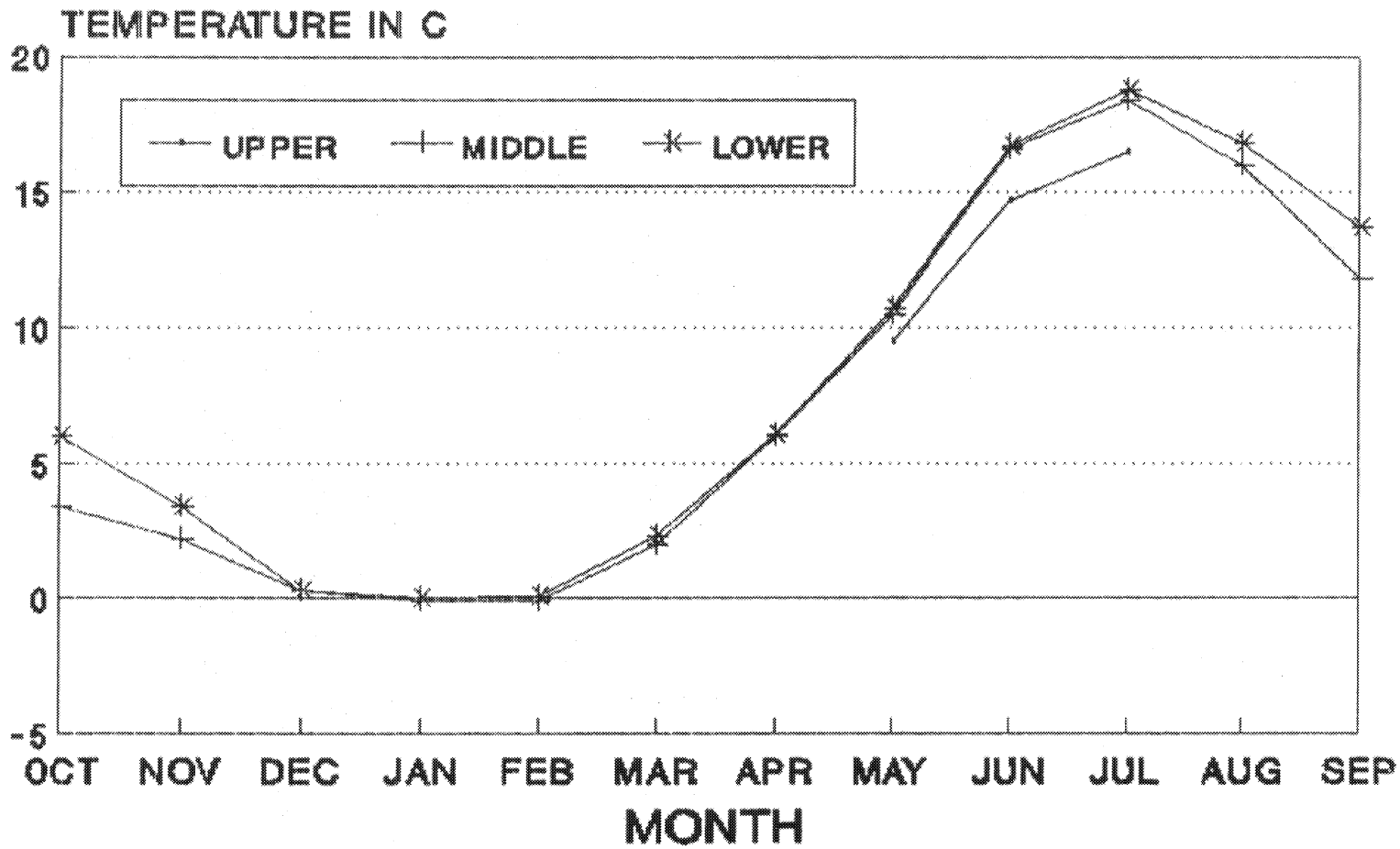
McCoy Creek and Sheep creek thermograph data has been gathered for two years. The data sets are inconclusive at this time and more years of data are needed to show the instream temperatures decreasing. As the riparian vegetation recovers and provides shade and bank storage of water the temperatures should be reduced.

MCCOY CREEK
MONTHLY MEAN TEMPERATURE



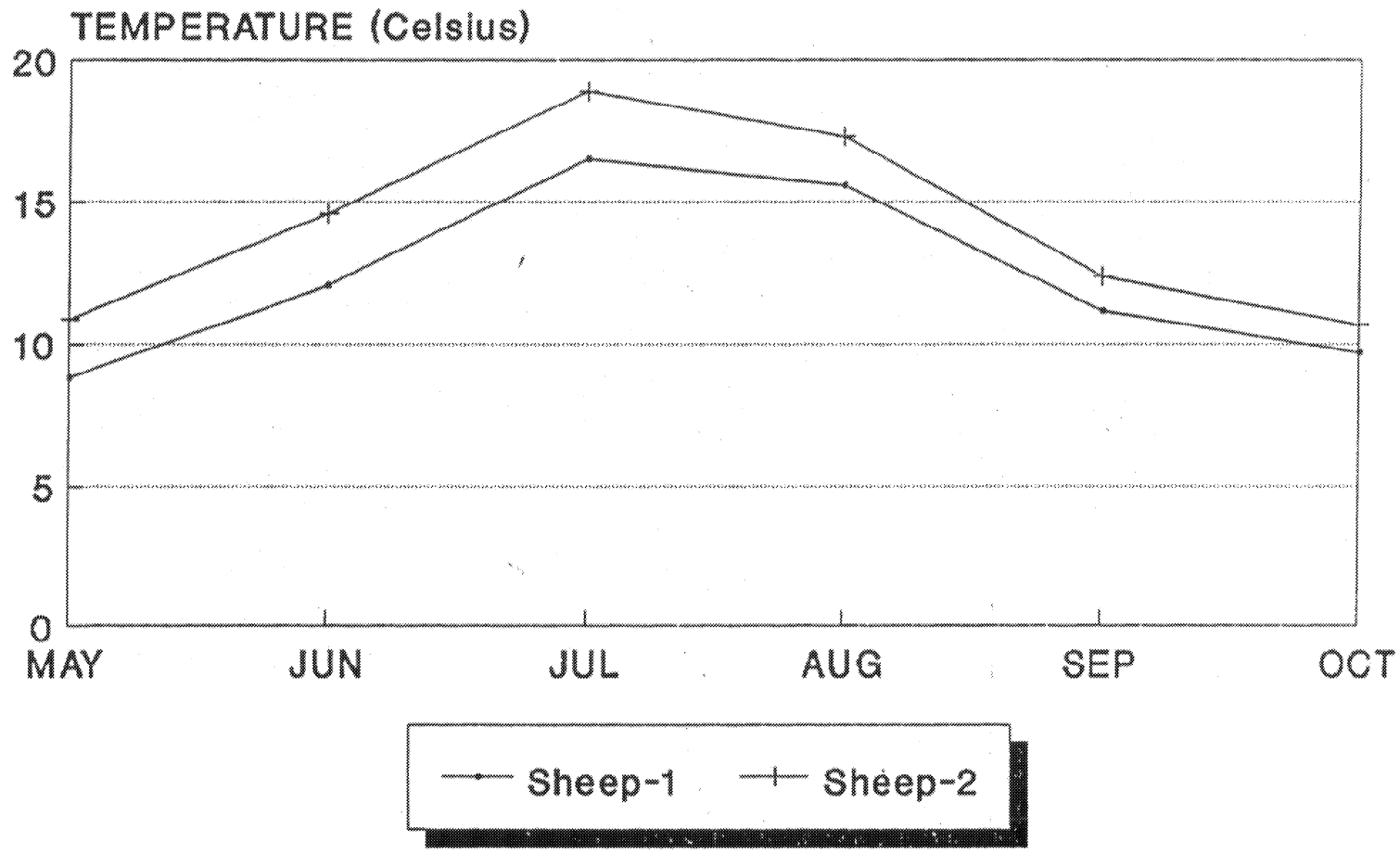
1988

MCCOY CREEK
MEAN MONTHLY TEMPERATURE



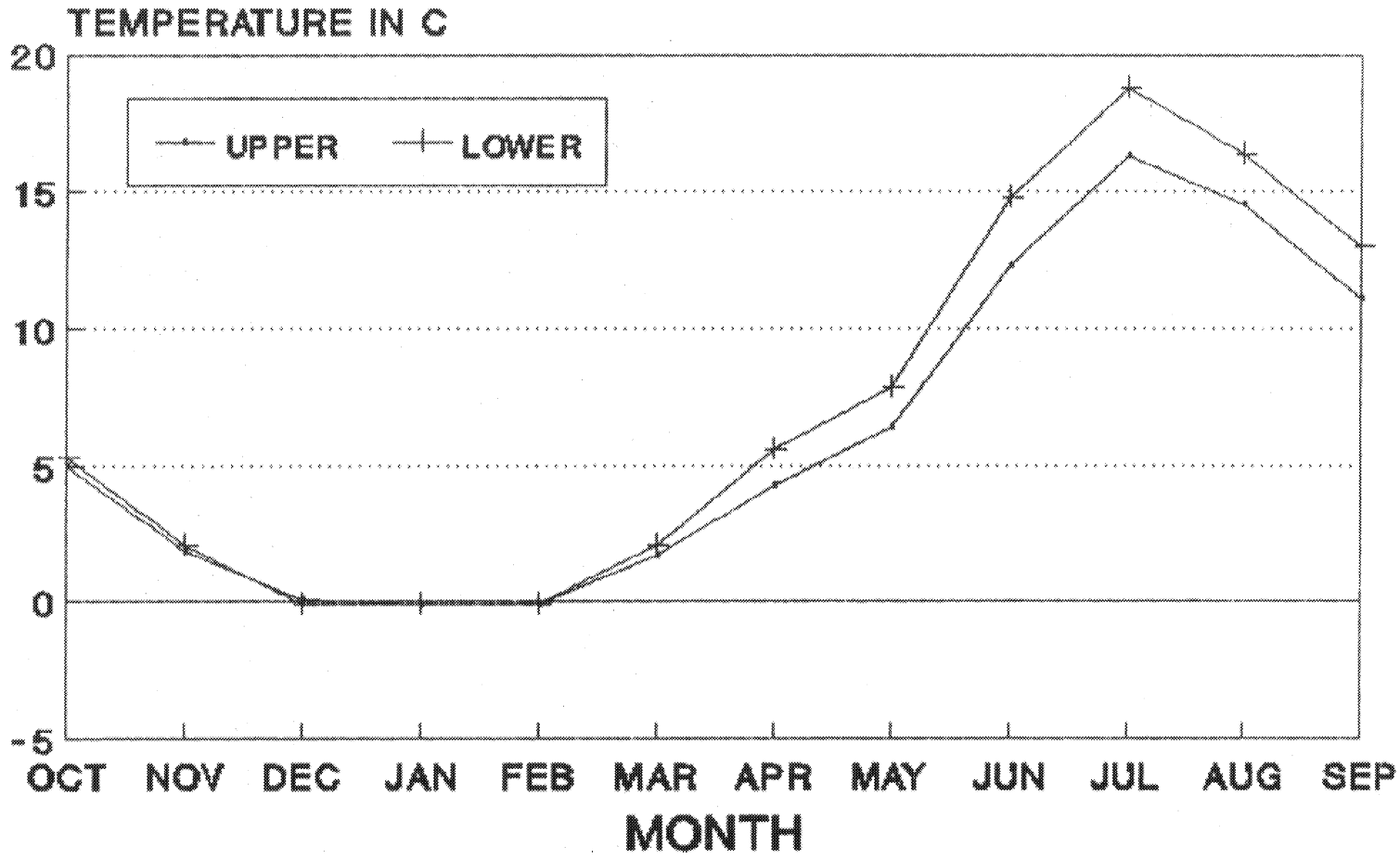
OCTOBER 1988 - SEPTEMBER 1989

SHEEP CREEK
MONTHLY MEAN TEMPERATURE



1988

SHEEP CREEK
MONTHLY MEAN TEMPERATURE



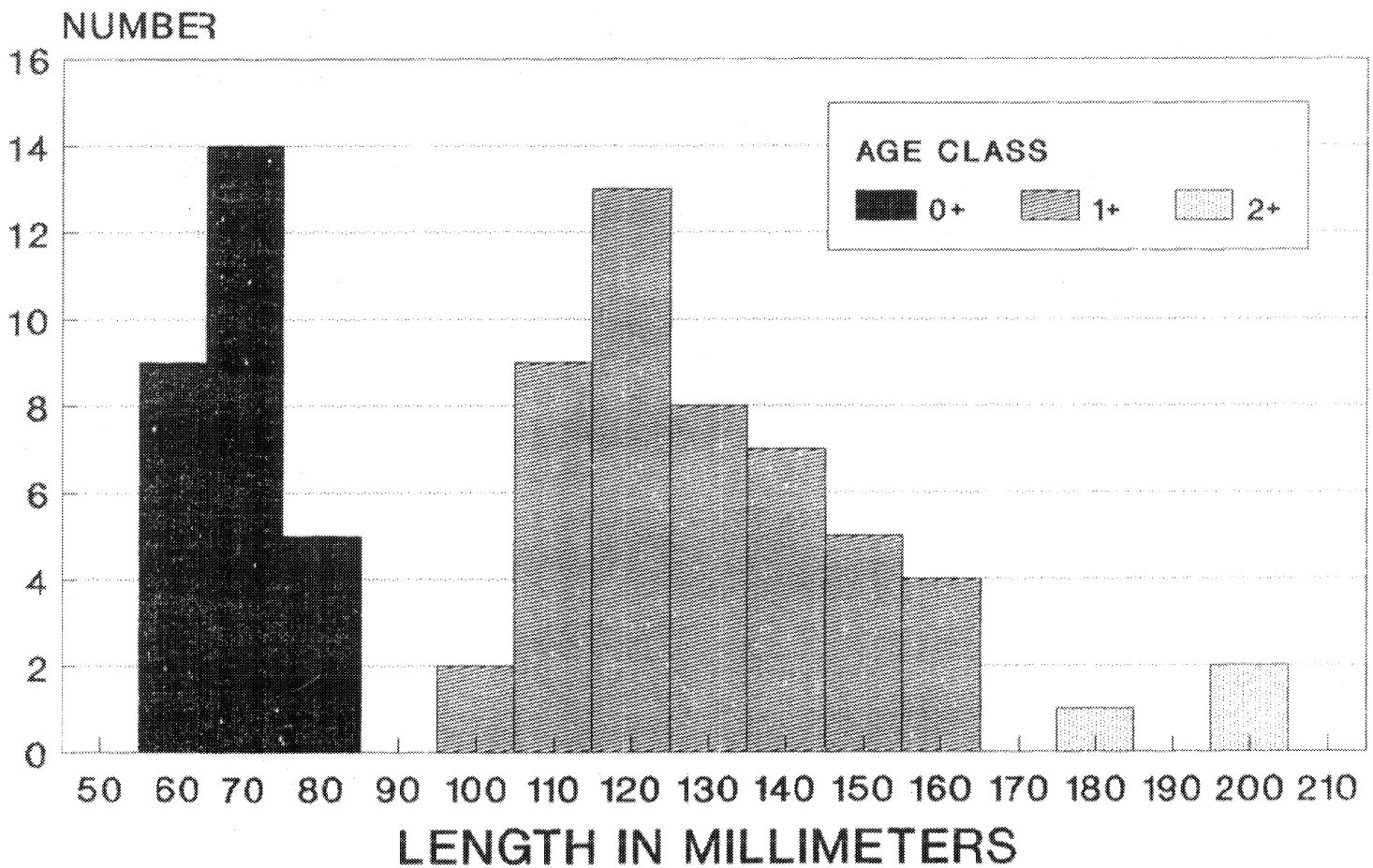
ICT. 1988 - SEPT 1989

APPENDIX B

BIOLOGICAL MONITORING

Electroshocking was done in Sheep and McCoy Creeks for biological monitoring in 1988 and 1989. The 1988 data has been summarized and graphed. The 1989 data has not been analyzed to date due to personnel changes and time constraints.

LENGTH FREQUENCY MCCOY
RAINBOW/STEELHEAD



igu = 5 er gr'tfrequency of rainbow/steelhead in McCoy Cr.

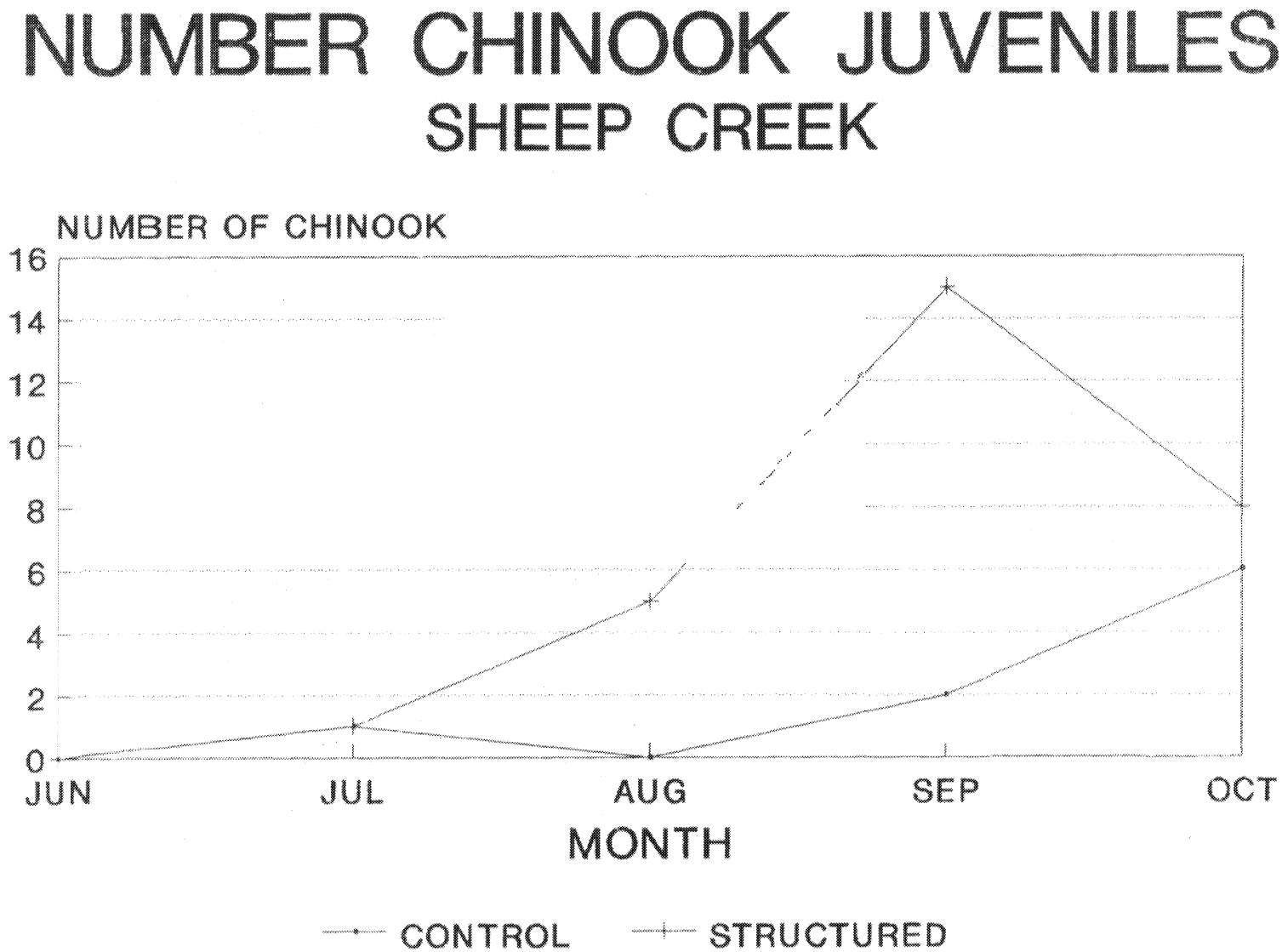


Figure 7. Number of chinook juveniles found in the Sheep Creek structured and control sections, 1988.

NUMBER RAINBOW/STEELHEAD
SHEEP CREEK

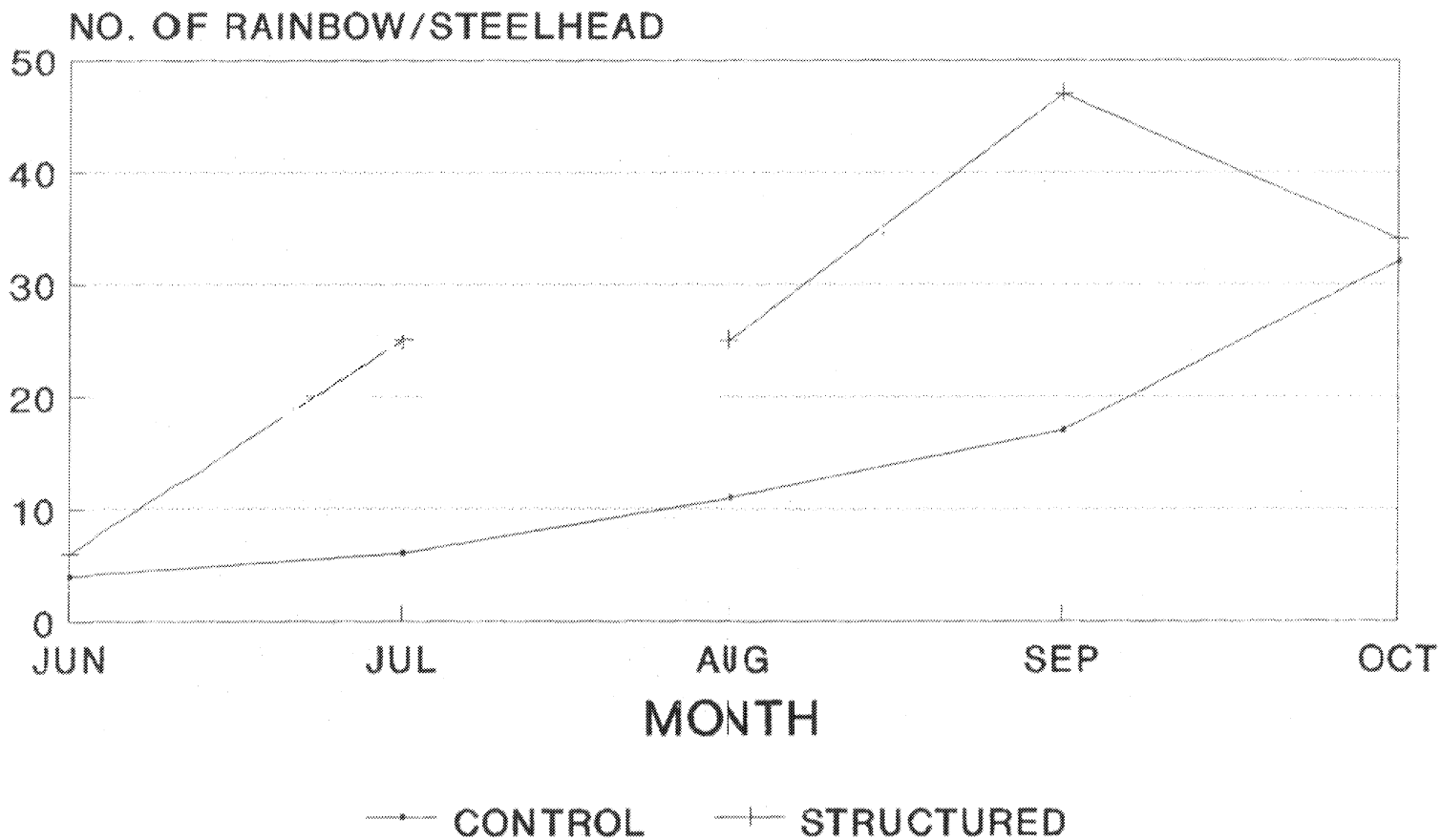


Figure 1. Number of rainbow/steelhead trout found in the Sheep Creek control and structured sections, 1988.

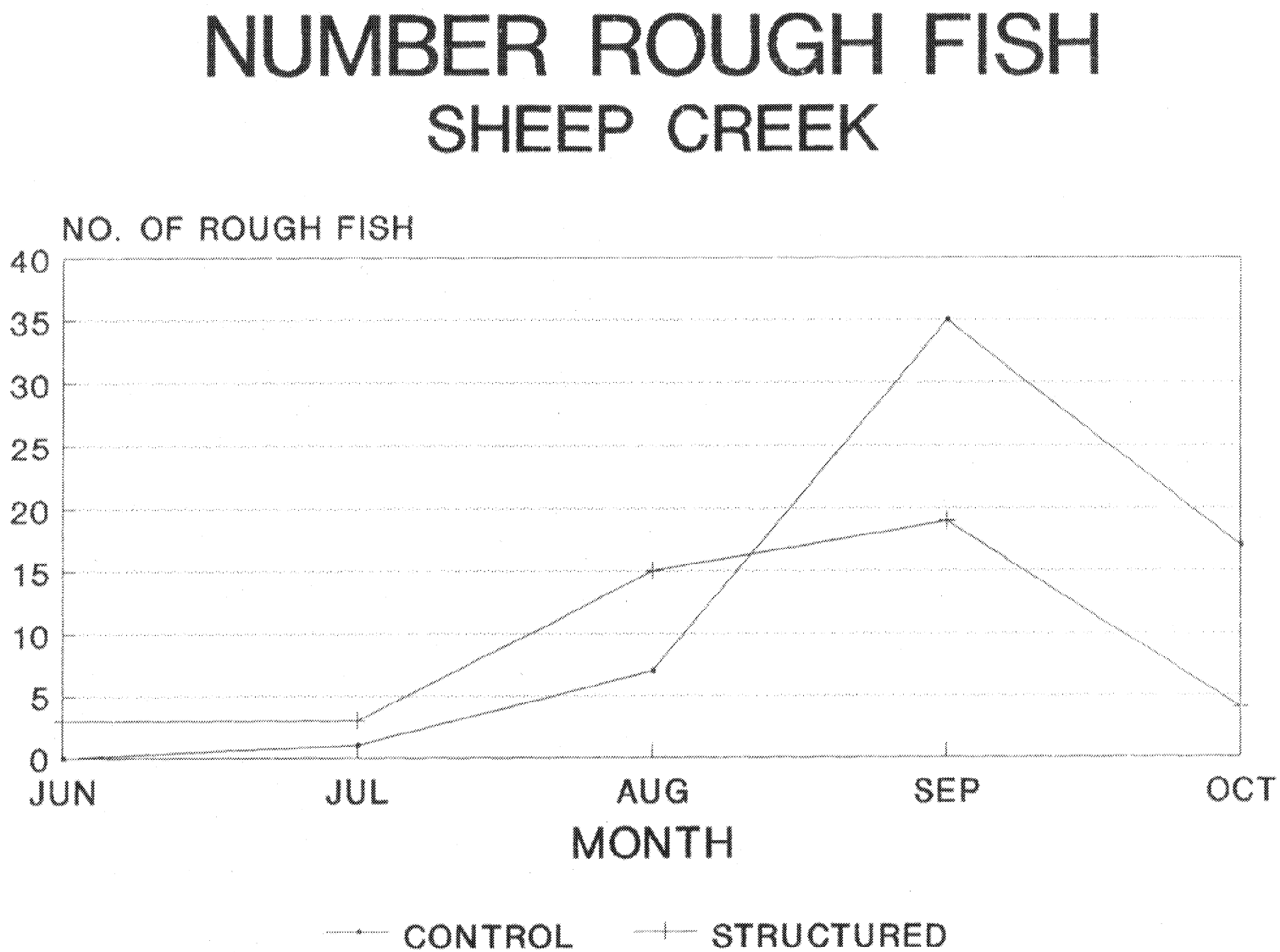


Figure 2. Number of rough fish found in the Sheep Creek structured and control sections, 1988.

APPENDIX C

STREAM INVENTORY

Stream inventories were completed in 1988. The data for Chicken, Beaver, Little Fly, Davis, and Clark Creeks was summarized in 1989. The data is shown in the following summarization sheets.

STREAM INVENTORY SUMMARIZATION SHEET

Page 1 of 1

Strm Name CHICKEN CR

Year of Inventory 1988

Inventory Intensity 50%

Summary Interval 1/2 MILE

Interval No.	1-5 1	6-10 2	11-15 3	16-20 4	21-25 5	26-30 6	31-35 7	36-42 8 1)	9	10	11	12	13	14	15	16	17	Total
POO %	18	21	25	38	23	19	26	32										25
GLE/RUN %	29	35	43	46	40	42	36	41										39
RIFLE %	53	44	32	16	37	39	38	27										36
WOOY DEBRIS INDEX	2	2	3	2	1	1	2	2										2
RIPARIAN DENSITY: DECID. 0-10' (< 5' tall)	0	0	3	3	2	0	0	1										1
RIPARIAN DENSITY: CONIF. 0-10' (< 5' tall)	0	0	2	0	0	0	0	0										0
RIPARIAN DENSITY: DECID. 0-20' (> 5' tall)	0	0	0	0	0	0	0	0										0
RIPARIAN DENSITY: CONIF. 0-20' (> 5' tall)	0	0	2	0	0	0	0	0										0
SIDE DENSITY	0	0	2	0	0	0	0	0										0

1) TRANSECTS 41 & 42 ARE INCLUDED WITH INTERVAL #8, RATHER THAN HAVING TWO TRANSECTS IN INTERVAL #9.

STREAM INVENTORY SUMMARIZATION SHEET

Stream Name BEAVER CR.

Inventory Intensity 50%

Page 1 of 1

Year of Inventory 1988

Summary Interval 1/2 MILE

Interval No.	1-5 1	6-10 2	11-15 3	16-20 4	21-25 5	26-30 6	31-35 7	36-40 8	41-45 9	46-50 10	51-55 11	56-60 12	61-65 13	14	15	16	17	Total
POOL %	21	21	18	9	12	10	10	16	23	31	26	6	18					17
GLIDE/RUN %	30	35	39	47	40	28	38	42	29	24	34	41	38					36
RIFFLE %	49	44	43	44	48	62	52	42	48	45	40	53	44					47
WOODY DEBRIS INDEX	2	2	2	2	2	2	1	2	3	3	3	2	2					2
RIPARIAN DENSITY CLASS: DECID. 0-10' (<5' tall)	7	6	11	10	10	9	8	3	2	5	17	13	13					9
RIPARIAN DENSITY CLASS: CONIF. 0-10' (<5' tall)	12	2	4	2	2	2	1	2	1	3	0	1	0					2
RIPARIAN DENSITY CLASS: DECID. 0-20' (>5' tall)	6	11	27	28	38	26	28	5	10	24	35	45	43					25
RIPARIAN DENSITY CLASS: CONIF. 0-20' (>5' tall)	11	5	12	6	12	5	5	7	14	7	7	6	4					8
SHADE DENSITY	26	28	61	39	74	50	30	23	20	29	8	46	20					35

STREAM INVENTORY SUMMARIZATION SHEET

Stream Name LITTLE FLY CREEK

Inventory Intensity 50%

Page 1 of 1

Year of Inventory 1988

Summary Interval 1/2 MILE (5 INVENTORY)

Interval No.	1-5 1	6-10 2	11-15 3	16-20 4	21-25 5	26-30 6	31-33 7 1)	8	9	10	11	12	13	14	15	16	17	Total
POOL %	15	18	18	30	30	30	51											27
GLIDE/RUN %	25	29	31	32	31	31	27											29
RIFFLE %	60	53	51	38	39	39	22											44
WOODY DEBRIS INDEX	3	3	3	3	3	1	1											2
RIPARIAN DENSITY CLASS: DECID. 0-10' (<5' tall)	1	0	0	2	5	0	0											1
RIPARIAN DENSITY CLASS: CONIF. 0-10' (<5' tall)	4	4	6	2	2	0	0											3
RIPARIAN DENSITY CLASS: DECID. 0-20' (>5' tall)	0	0	1	1	1	0	0											0
RIPARIAN DENSITY CLASS: CONIF. 0-20' (>5' tall)	9	10	7	3	11	1	0											6
SHADE DENSITY	4	7	6	3	8	6	0											5

1) ONLY 3 TRANSECTS IN THIS SUMMARY

STREAM INVENTORY SUMMARIZATION SHEET

Stream Name: Davis Creek

Year of Inventory: 1988

Inventory Intensity: 50%

Summary Interval: ½ mile

Interval No.	1-5 1	6-10 2	11-15 3	16-20 4	21-25 5	26-30 6	31-35 7 1-4	36-40 8	41-45 9	46-50 10	51-55 11	56-60 12 1-4	61-65 13	66-70 14	71-75 15 1-3	76-80 16	81-85 17	Total	
POOL %	12	18	26	24	16	17	33	40	28	22	23	23	18	25	27	31	24	24	407
GLIDE/RUN %	16	25	43	30	23	21	22	21	35	31	25	14	20	19	16	22	21	24	404
RIFFLE %	73	61	35	47	62	63	46	40	42	51	78	60	63	57	58	48	56	56	940
WOODY DEBRIS INDEX	4	5	4	5	4	5	5	5	5	6	5	5	3	4	4	4	5	5	77
RIPARIAN DENSITY CLASS: DECID. 0-10' (<5' tall)	15	30	9	14	15	6	3	9	8	11	9	5	6	5	12	5	7	10	169
RIPARIAN DENSITY CLASS: CONIF. 0-10' (<5' tall)	9	3	9	12	11	7	2	7	4	5	2	2	3	4	7	2	4	6	93
RIPARIAN DENSITY CLASS: DECID. 0-20' (>5' tall)	30	33	7	7	9	12	13	16	12	13	21	9	13	3	16	11	8	14	233
RIPARIAN DENSITY CLASS: CONIF. 0-20' (>5' tall)	74	16	18	29	24	29	28	36	48	29	19	16	19	20	33	16	26	29	480
SHADE DENSITY	74	81	66	68	72	78	72	74	80	68	71	41	41	43	61	42	53	64	1085

STREAM INVENTORY SUMMARIZATION SHEET

Name Davis Crk

Year of Inventory 1988

Inventory Intensity 50%

Summary Interval ½ mile

Interval No.	14-18 1	19-23 2	24-27 3	2-6 4	7-11 5	12-16 6	17-21 7	22-26 8	27-31 9	32-33 10 1-3	4-8 11	9-13 12	14-18 13	19-24 14	15	16	17	Total	
POOL %	25	20	17	21	44	48	37	66	52	36	33	56	39	38				31	944
GLIDE/RUN %	22	31	23	23	30	47	33	20	93	39	35	43	62	43				29	898
RIFFLE %	55	50	60	56	22	6	32	15	6	26	34	0	0	20				43	1322
WOODY DEBRIS INDEX	5	5	4	4	5	5	4	4	5	5	5	5	5	4				5	142
RIPARIAN DENSITY CLASS: DECID. 0-10' (< 5' tall)	10	6	8	6	8	14	7	4	13	9	7	5	5	14				10	285
RIPARIAN DENSITY CLASS: CONIFA. 0-10' (< 5' tall)	5	3	5	7	3	5	7	4	6	5	4	6	3	7				6	163
RIPARIAN DENSITY CLASS: DECID. 0-20' (> 5' tall)	12	1	4	4	8	6	8	3	7	1	5	1	6	3				10	302
RIPARIAN DENSITY CLASS: CONIF. 0-20' (> 5' tall)	31	36	21	44	34	32	36	18	9	10	21	6	11	20				26	809
SHADE DENSITY	66	51	53	79	67	66	64	22	26	15	39	24	18	52				56	1727

STREAM INVENTORY SUMMARIZATION SHEET

Stream Name Clark Creek

Inventory Intensity 50%

Page 1 of 2

Year of Inventory 1988

Summary Interval 1/2 mile (5 trans.)

Interval No.	1-5 1	6-10 2	11-15 3	16-20 4	21-25 5	26-30 6	31-35 7	36-40 8	41-45 9	46-50 10	51-55 11	56-60 12	61-65 13	66-70 14	71-75 15	76-80 16	81-85 17	1-85 Total
POOL %	24	23	22	32	36	36	38	20	38	38	51	34	33	32	25	19	16	30
GLIDE/RUN %	26	36	35	37	39	36	23	36	35	27	24	24	23	32	38	26	25	31
RIFFLE %	50	41	43	31	30	28	39	44	27	34	25	42	44	36	37	55	59	39
WOODY DEBRIS INDEX	4.0	3.0	3.6	3.8	3.5	3.2	3.2	2.2	3.2	3.1	3.6	3.2	3.0	3.0	2.8	2.6	1.8	3.1
RIPARIAN DENSITY CLASS: DECID. 0-10' (<5' tall)	13	16	14	8	12	12	9	8	9	10	16	14	9	7	17	5	6	11
RIPARIAN DENSITY CLASS: CONIF. 0-10' (<5' tall)	6	6	6	3	4	2	4	4	3	3	6	2	5	6	5	4	4	4
RIPARIAN DENSITY CLASS: DECID. 0-20' (>5' tall)	2	20	23	28	43	40	25	14	34	28	61	34	37	32	22	18	5	27
RIPARIAN DENSITY CLASS: CONIF. 0-20' (>5' tall)	29	13	16	27	19	13	28	9	13	12	20	10	18	24	17	16	5	17
SHADE DENSITY	65	37	40	48	57	46	70	13	43	24	58	35	48	60	34	29	27	43

STREAM INVENTORY SUMMARIZATION SHEET

Stream Name CLARK CR. Inventory Intensity 50%

Year of Inventory 1988 Summary Interval 1/2 MILE (5 TRANS.)

Interval No.	86-90 1	91-95 2	96-100 3	101-105 4	106-110 5	111-115 6	116-120 7	121-125 8	126-130 9	131-135 10	136-140 11	141-145 12	146-150 13	151-155 14	156-160 15	166-174 (1 2) 16	17	Total
POOL %	22	16	15	10	28	36	19	8	23	20	7	14	44	18	25	42		22
GLIDE/RUN %	20	34	28	52	38	35	40	42	34	42	40	29	35	55	30	22		36
RIFFLE %	58	50	57	38	34	29	41	50	43	38	53	62	21	27	45	36		42
WOODY DEBRIS INDEX	2.6	2.2	1.6	1.6	1.8	1.8	0.9	0.7	1.7	1.3	1.6	0.5	2.0	2.2	1.9	1.8		2
RIPARIAN DENSITY CLASS: DECID. 0-10' (< 5' tall)	5	7	4	7	4	4	7	8	8	13	11	20	13	8	14	8		9
RIPARIAN DENSITY CLASS: CONIF. 0-10' (< 5' tall)	3	2	4	0	0	0	0	0	0	1	0	0	0	0	0	0		1
RIPARIAN DENSITY CLASS: DECID. 0-20' (> 5' tall)	13	14	32	33	46	37	43	27	38	37	36	17	45	38	48	21		33
RIPARIAN DENSITY CLASS: CONIF. 0-20' (> 5' tall)	15	16	9	3	1	1	0	1	0	1	0	2	12	2	1	2		4
SHADE DENSITY	43	55	65	40	57	40	39	30	10	35	36	22	74	57	50	29		43

1) INVENTORY SECTIONS 161-165, 15 IN A PORTION OF STREAM IN WHICH DATA WAS NOT COLLECTED DUE TO BEING UNABLE TO OBTAIN LANDOWNER PERMISSION TO ACCESS LAND.

2) INVENTORY SECTION 166 AND 171-174 WERE SUMMARIZED TOGETHER. SECTIONS 167-170 IS IN A PORTION OF STREAM IN WHICH DATA WAS NOT COLLECTED DUE TO BEING UNABLE TO OBTAIN LANDOWNER PERMISSION TO ACCESS LAND.

APPENDIX D

SWAMP CREEK BREEDING BIRD SURVEY - 1989

The Swamp Creek breeding bird survey route initiated in 1986 was conducted this year on July 4, 1989. Stops were identical to previous years with good weather conditions for surveying. Livestock was strung-out along the full length of the route, hampering the observers ability to hear bird calls. Habitat conditions inside the fenced area has not changed dramatically since last year. Tall dense stands of grass dominate the vegetation type with trees and shrubs, somewhat randomly dispersed and coming on at a slower rate. We will probably not see a large change in bird species diversity or total number of individuals until the tree and shrub component increases, creating a multi-layered type habitat.

Bird species observed during the 1989 survey but not recorded on previous surveys were golden eagle, western tanager, and mallard.

Surveys will be conducted in future years to monitor bird population changes as the habitat slowly improves.

he following table compares survey results for the past four ears 1986-1989

Species	Number of Individuals 1986	1987	1988	1989
Great Blue Heron	0	1	0	0
Red-tailed Hawk	0	1	0	0
American Kestrel	0	0	1	1
Ring-necked Pheasant	2	1	1	1
Common Snipe	4	0	7	2
Mourning Dove	4	2	5	1
Common Nighthawk	1	1	1	0
Hammond's Flycatcher	1	0	0	0
Willow Flycatcher	5	4	5	2
Western Wood-pewee	4	2	0	0
Western Kingbird	0	1	0	0
Barn Swallow	3	0	1	8
Steller's Jay	0	1	0	0
House Wren	1	0	0	0
Rock Wren	5	1	0	0
Red-breasted Nuthatch	0	1	0	0
American Robin	30	22	18	17
Common Yellowthroat	1	1	0	0
MacGillivray's Warbler	1	0	0	0
Western Tanager	0	1	0	1
Killdeer	0	0	2	0
Rough-wing Swallow	0	0	2	0
Black-billed magpie	0	0	4	0
Chipping Sparrow	1	2	0	0
Song Sparrow	1	3	4	6
Dark-eyed Junco	2	4	2	3
Vesper Sparrow	6	0	1	2
Red-winged Blackbird	16	23	27	25
Brewer Blackbird	40	23	36	27
Western Meadowlark	4	1	0	2
Brown-headed Cowbird	9	9	15	5
American Coot	1	0	0	0
Nashville Warbler	1	0	0	0
Common Flicker	0	0	2	2
Mallard	0	0	0	1
Golden Eagle	0	0	0	1
SPECIES TOTAL/YEAR	23	21	18	18
INDIVIDUAL TOTAL/YEAR	143	105	134	107

H1/15

APPENDIX E

THE OBSERVER NEWSPAPER ARTICLE

A newspaper article was written about the BPA fish habitat project on the Upper Grande Ronde River and appeared in The Observer on October 17, 1989. The article is in Appendix E.

outdoors

Stream banks

Riparian zones act like sponges—storing, releasing water over time

By Dick Mason
Observer Staff Writer

One spinoff of America's heightened awareness of conservation issues is an expanding vocabulary.

For example the word recycling is commonplace today. Twenty-five years ago the term wasn't included in some dictionaries.

Another case in point is the term "riparian zone."

"Ten years ago few people understood what it meant. Today most know of it and its benefits," said Steve Williams, fish habitat biologist for the Oregon Department of Fish and Wildlife.

The construction of riparian zones – vegetated areas along streams — is an important component of the ODFW's Grande Ronde Fish Habitat Enhancement Program.

The program, started in 1984, is funded by the Bonneville Power Administration. To date, 24½ miles of streams in the Grande Ronde River basin have had riparian zone work completed by the ODFW.

The project is helping restore many stream banks to the quality they enjoyed prior to the time when there was less intensive land utilization. It's a voluntary program involving private landowners.

The ODFW is performing three tasks on these lands: creating in-stream fish habitat, stabilizing banks and promoting vegetation growth.

The program has been a qualified success.

"It's fair to say that the response of private landowners has been mixed," Williams said.

He explained that the key to the program is identifying mutual goals which meet the needs of the ODFW and landowners.

The ODFW wants the sites to help increase fish and wildlife production while the landowner may be most concerned with better range utilization.

The installation of fencing near streams often helps both parties realize their objectives. It provides protection for the riparian areas and at the same time helps the rancher better distribute his livestock.

To help landowners the ODFW uses a corridor fencing technique. This may assist the rancher by dividing a large, less manageable pasture into more easily managed pastures. Some ranchers tie into these corridor fences with their own cross fencing, thereby further dividing pastures for better livestock management.

"A lot of ranchers would like to build fence corridors but they can't afford to," said ODFW biologist Willie Noll. "The cost of installing fences and maintaining them can be prohibitive," Noll said

The construction of off-site water stations by the ODFW is another means of improving livestock distribution. The sites are often several hundred yards from a stream.

Noll explained that off-site water attracts livestock that normally wouldn't otherwise travel an area. This means the animals will graze in an area they might not otherwise touch, allowing better overall range utilization.

"Better cattle distribution gives a landowner more management flexibility," Williams said.

Noll noted that the ODFW maintains the corridor fences it installs at no charge.

Before riparian work can be started, the ODFW and the landowner must reach a 15-year lease agreement. No money is exchanged and the landowner does not incur any added expense.

Private landowners participating in the Oregon Department of Fish and Wildlife's riparian zone project often post this sign indicating they are in the program. The project, which began in 1984, is funded by the Bonneville Power Administration.

The ODFW's addition of in-stream habitat has helped to achieve the fish-management goal of doubling populations in some areas.

The vegatation gives fish more to feed on and prevents water temperatures from reaching extremes. It cools the water in the summer and helps it retain heat in the winter.

"Keeping the water warmer reduces the thickness of ice," Williams said. "This prevents a stream from freezing to the bottom."

A good riparian zone will act like a sponge, storing water that it picks up over the winter and releasing it over time. This allows the river to have a more even stream flow throughout the year.

"In a lot of areas, the soil is compacted," Noll said. "This means spring rains will run off rather than soak in the water. When the soil is looser, the water is absorbed and then released little by little through the spring and summer."

Another advantage of riparian zones is that they've proven to be a magnate for an assortment of wildlife including nongame birds and furbearing mammals.

The program will continue into the 1990s.

"Acceptance of the program by landowners will be a determining factor in how long the program continues," Noll said. "If interest remains high, it could continue for several years."