

ANNUAL REPORT - LYONS FERRY AND TUCANNON GAMEFISH HATCHERIES

OCTOBER 1, 1989 TO SEPTEMBER 30, 1990

CONTRACT NUMBER: 14-16-0001-86501 (RWG)

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LYONS FERRY HATCHERY
STARBUCK, WASHINGTON

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TUCANNON GAMEFISH HATCHERY
POMEROY, WASHINGTON

February 28, 1991

Interested Parties and Individuals:

Enclosed are the 1990 annual Reports for the Washington Department of Wildlife hatchery programs at Lyons Ferry and Tucannon. These reports summarize the numbers of fish planted and pounds produced, and projects undertaken and accomplished during this reporting period.

This report is intended to fulfill Department of Wildlife annual reporting obligations for these facilities to the U.S. Fish and Wildlife, Lower Snake River Compensation Plan (LSRCP). The report is also made available to all interested parties and individuals. Funding for the operation and maintenance of these two facilities is obtained through the LSRCP.

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ANNUAL REPORT - LYONS FERRY HATCHERY

OCTOBER 1, 1989 TO SEPTEMBER 30, 1990

CONTRACT NUMBER: 14-16-00L01-90525 (RGW)

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STARBUCK, WASHINGTON

INTRODUCTION

Lyons Ferry Trout Hatchery is part of the Lower Snake River Compensation Plan and has been in operation since 1983. Mitigation goals are: 875,000 summer-run steelhead weighing of 116,000 pounds and 120,000 rainbow weighing 40,000 pounds. Two satellite facilities, Cottonwood and Dayton ponds located on the Grande Ronde and Touchet Rivers respectively, are used to acclimate smolts for a period of two months prior to release. The Tucannon Trout Hatchery is also a satellite facility of Lyons Ferry Trout Hatchery with mitigation goals of 120,000 summer-run steelhead weighing 8,000 pounds, also producing 153,000 rainbow weighing 50,000 pounds.

Fiscal Year 1989-90 production of steelhead was 818,352 smolts and 227,632 sub-smolts with weights of 177,458 pounds and 3,490 pounds, respectively. Rainbow production included 128,994 legal size fish and 248,164 sub-legal size fish with weights of 39,414 pounds and 6,839 pounds, respectively.

Steelhead adult returns were similar to previous years. However, the number of females spawned and eggs taken doubled. A total of 2,458 adults were trapped in the months of August, September, October, November and December. A total of 2,570,676 green eggs were taken with 2,014,237 eggs reaching the eyed stage. An experimental IHNV Vaccine developed by Dr. Jo-Ann Leong, Oregon State University, was tested this year.

LYONS FERRY SUMMER-RUN STEELHEAD

1989 BROOD YEAR

Due to an IHNV epizootic, 941,000 fingerlings were destroyed. Fingerling replacements were obtained from Idaho Fish and Game and other WDW facilities (Pahsimeroi stocks, Ringold and Wells stocks) summer-run steelhead.

1990 BROOD YEAR

Operation of the fish ladder commenced on August 1, 1989 and ceased on December 12, 1989. A total of 2,503 adult steelhead returned to the trap. Peak returns occurred between September 17 and October 9 (Table 1). On November 16, Fish Pathologists Steve Roberts, John Kerwin, Bruce Bolding and Leni Oman injected 73 females with a IHNV subunit vaccine developed by Dr. Jo-Ann Leong. A control group of 75 females were injected with saline solution. These randomly selected females were held in adult holding pond number two along with other non-vaccinated adults. By the end of the spawning cycle virtually 100 percent of all adults in this pond tested positive for IHNV.

Spawning occurred over a period of six weeks beginning January 18, 1990 and ending February 27, 1990 resulting in 2,570,676 green eggs (Table 2). A total of 1,483,485 eyed eggs were retained for rearing. An unusually high egg mortality (1,087,191) was primarily due to the high incidence of IHNV in the adults. Hatching of the eggs was completed on March 24 resulting in 1,444,609 fry with a 2.6 percent egg loss from eyed stage to hatching. In May and June, 996,801 fry (282/lb.) equalling 3,533 lbs. were transferred to raceways. Bacterial gill disease was diagnosed on May 7 and the fish were treated with Hyamine resulting in only minimal losses. In July and August, 227,632 fry (40.9 - 114.9/lb) equalling 3,490 lbs. were released into Rock Lake (Table 5). Marking (ad-clip) of the 689,425 fry was completed August 13 prior to transfer to the production lakes. By the end of September, 689,425 fingerling (32.9/lb.) equalling 31,503 lbs. were on hand.

Table 1. Adult Returns to Lyons Ferry Hatchery and Adults Shipped.

LYONS FERRY SUMMER STEELHEAD

Date of first return.....	8-03-89
Date of last return.....	12-12-89
Number of females returning.....	1,508
Number of males returning.....	950
Dates of peak returns.....	9-17-89 to 10-09-89
Number of females and males released to spawn naturally.....	548
Mortality of all adult returns.....	402
Number of adults shipped.....	10

Table 2. Spawning Records for 1990 Lyons Ferry Stock Summer Steelhead.

DATES SPAWNED	NUMBER EGGS TAKEN	NUMBER FEMALES	NUMBER MALES
1-18-90	70,596	12	24
1-30-90	590,148	110	281
2-06-90	593,388	98	200
2-13-90	408,628	66	136
2-20-90	527,695	84	178
2-27-90	380,221	68	136

Total number of females spawned.....	437
Total number of males spawned.....	954
Total number of green eggs.....	2,570,676
Total number of eyed eggs.....	2,014,237
Number of eggs retained for rearing.....	1,483,485
Number of eggs shipped.....	15,640

PAHSIMEROI STOCK

On October 1, 237,255 fingerling (67.1/lb.) equalling 3,535 lbs. were on hand. On October 10, 93,023 fingerling (32.1/lb) equalling 2,900 lbs were received from Hagerman National Fish Hatchery. A total of 167,200 were moved to raceways in February for marking (coded wire tags, freeze brands and ventral fin clip). These marked fish were divided into four groups (Table 2). By March 13, 39,175 marked fish (6.3/lb.) equalling 6,250 lbs. and 40,077 unmarked fish (7.9/lb.) equalling 5,073 lbs. were transferred to Curl Lake acclimation pond. By April 30, 221,338 smolts (4.6/lb. - 5.8/lb.) equalling 41,820 lbs. were released into the following waters; Asotin Creek, Snake and Tucannon Rivers. (Table 5).

RINGOLD/WELLS STOCK

On October 1, 185,207 Ringold fingerling (14.1/lb.) equalling 13,138 lbs. and 126,914 Wells fingerling (43.2/lb.) equalling 2,936 pounds were on hand. On October 16 and 17, Ringold fingerling were combined with Wells fingerling in Lake Two at Lyons Ferry. On January 22 through 25, 96,680 fish were transferred to raceways for marking (coded wire tags, freeze brands and ventral fin clips). Marking of all summer-run steelhead was completed on February 20. The marked fish were divided into two main groups (Table 2). By March 13, 39,985 marked fish (5.0/lb.) equalling 7,995 lbs. and 69,760 unmarked fish (6.4/lb.) equalling 10,900 lbs. were transferred to Dayton Acclimation Pond. By April 30, 278,762 smolts (3.3/lb. - 3.9/lb.) equalling 76,975 lbs. were released into the following waters; Mill Creek, Touchet and Walla Walla Rivers (Table 5).

WALLOWA STOCK

On October 1, 239,002 fingerling (65/lb.) equalling 3,677 lbs. were held in Lake Three. An overrun was realized on March 8, when 239,140 fingerling (7.3/lb.) equalling 32,900 lbs. were transferred to Cottonwood Acclimation Pond. By April 30, 239,000 smolts (5.1/lb.) equalling 47,340 lbs. were released into the Grande Ronde River (Table 5).

Table 3. Marking Breakdown of Steelhead for 1990 Release.

NUMBER OF FISH	BRAND	TAG CODE	FIN CLIP
<u>Asotin Creek</u>			
20,142	LA-IC-4	63-7/25-R3	AD/LV
19,950	RA-IC-4	63-14/22-R3	AD/LV
<u>Curl Lake</u>			
20,012	LA-IC-1	63-39/12	AD/LV
20,065	RA-IC-1	63-39/11	AD/LV
<u>Dayton Acclimation Pond</u>			
20,190	LA-S-1	63-39/8	AD/LV
19,780	RA-S-1	63-39/7	AD/LV
<u>Lyons Ferry Trout Hatchery</u>			
18,150	LA-IC-3	63-14/21-R3	AD/LV
20,805	RA-IC-3	63-8/42-R3	AD/LV
<u>Walla Walla River</u>			
19,802	LA-S-2	63-39/10	AD/LV
20,015	RA-S-2	63-39/9	AD/LV

GOLDENDALE STOCK RAINBOW TROUT

1988 BROOD YEAR

At the start of the fiscal year, 70,892 fingerling (14.5/lb.) equalling 4,902 lbs. were on hand. In the month of February, 50,514 fingerling (2.1 - 2.6/lb.) equalling 22,750 lbs. were released into local lowland lakes (Table 5). During the months of March and April, 15,475 fingerling (1.8 - 2.5/lb.) equalling 7,414 lbs. were released into local lowland lakes (Table 5).

SPOKANE STOCK RAINBOW TROUT

1988 BROOD YEAR

At the beginning of the fiscal year 55,158 fish (6.8/lb.) equalling 8,076 lbs were on hand. On October 6, 63,005 fish (6.8/lb) equalling 9,250 lbs. were transferred to the State of Idaho. An overrun of 7,847 fish was realized at this time.

1989 BROOD YEAR

On December 22, we received 435,000 eyed eggs (290/oz.) equalling 1,500 ounces from Spokane Trout Hatchery, . Hatching was completed on January 5, resulting in 417,261 fry with a four percent egg loss (17,739). On March 14, 366,706 fry (183 and 171/lb.) were transferred to raceways. Bacterial gill disease was diagnosed on May 2 and the fish were treated with Hyamine with only minor losses. On May 16, 185,430 fry (57.3/lb.) equalling 3,234 lbs. were transferred to the State of Idaho. Again on July 10, 62,734 fingerling (17.4/lb.) equalling 3,605 lbs were transferred to the State of Idaho. The remaining 111,655 fingerling (16.7/lb.) were split into five raceways for rearing to legal size. On August 8, 63,732 fingerling (36.6/lb.) equalling 1,740 lbs. were transferred to Lyons Ferry Hatchery from the Tucannon Hatchery. These fish were ad-clipped on September 11 and were transferred to Idaho in October.

OPERATIONS & MAINTENANCE

Engineering Projects

The U.S. Army Corps of Engineers had "clean-up" contracts scheduled in this fiscal for the following: electrical work at the Marmes Site, asphalt "sink" hole repairs, pinch valve replacement in degassing tower, control valve repair, transducer (water level) replacement in the head tank building and replacement of the fish ladder pump.

The transducer repair, fish ladder pump and degassing tower repair contracts were completed satisfactorily. Additional work is needed to complete the contract on the Marmes electrical system. The contract for asphalt "sink" holes cannot be completed and the problem will be addressed as an ongoing maintenance task.

The U.S. Army Corps of Engineers also replaced the "check" valve in pump number eight. The pump shaft and spider bearings were replaced and the pump bowl refurbished on this pump in September. Total cost of this repair was \$18,121.02.

Harold Harty and Gary Griffen designed a new transportation tank to replace the existing fiberglass tanks that are presently in use on our fish transportation truck. The existing tanks are not suitable for our purposes and have shown serious signs of deterioration.

Construction Projects and Maintenance

The hatchery crew was involved in many projects over the fiscal year to improve the efficiency of hatchery operations and repair or replace damaged or faulty equipment. The dam board channels on the raceways were re-designed to accommodate shorter, lighter dam boards. All raceway dam boards were replaced in January. Three sets of troughs were enclosed with a plastic curtain as a precaution against disease and the incubation system was enlarged for greater capacity. We considered the estimated cost (\$50,000.00) of replacing the bird netting structures over raceways to be exorbitant and therefore took a new approach. The netting was removed and the cross wires shortened and adjusted to the proper tension. Avian predation has not increased and the cost of this repair was minimal.

Numerous problems were again encountered with the Telemetry/Alarm System throughout the year. After consulting United Pacific Controls, all telemetry receiving and sending cards were sent to New Jersey (Servotone, Inc.) for repair and re-calibration.

Our back up diesel generators malfunctioned during a power outage in July. Evidently, an injector had stuck on the diesel engine as we were receiving a "Low Rpm" and "Low Amp" indication signal. Spokane Diesel, the original installer, was called in to correct the problem. Since that time, the generators have been operating as designed.

A new heat pump and additional duct work was installed in the hatchery quarters in December. Two days after installation, the heat exchanger in the heat pump malfunctioned and destroyed the new unit. A new unit was installed December 29 and has operated properly since that time. Additionally, the heat pump in residence four went out and was replaced with a new unit in June. The air compressors that supply air pressure to the domestic, fire and maintenance water systems and to the fish feeders failed. We were able to rebuild one compressor for a nominal sum as only a few minor parts (rings, gaskets and stud bolts) were needed. The other compressor was beyond repair and a new unit was purchased and installed in August.

Several times throughout the year the revolving screen gear box on lake three malfunctioned which created a high water situation in the lake. A new unit was purchased and installed in February.

In February and June the 14,000 volt underground electrical system malfunctioned. Each time the system burned the "Elbow" connectors in the underground vault. S&S Electric was called in to make repairs as we have neither the expertise nor the equipment to attempt such repairs.

Gary Griffen, Plant Mechanic, constructed and installed new Department of Wildlife signs throughout the hatchery complex.

The Dayton Pond intake plugged with accumulated river rock. After obtaining all the necessary permits a contractor was called in to clean out the system. This should help prevent water flow problems at the intake for a couple of years.

EQUIPMENT PURCHASES

Equipment purchases for the fiscal year include an Austin Computer and a 1990 Chevy S-10 pickup. Our IBM computer was on its last leg and in need of major repairs. An Epson printer and Mitsubishi color monitor were also purchased to complete our computer hardware package. The new S-10 pickup is a replacement for the S-10 transferred to Mark Shuck and is a versatile rig used for our acclimation ponds, travel, etc.

N.P.D.E.S. PERMITS

National Pollutant Discharge Elimination System Waste Discharge Permits (N.P.D.E.S.) were obtained for Lyons Ferry Hatchery, Dayton and Cottonwood Acclimation Ponds as required by the Clean Water Act and Washington Code. The cost for the 1990 permit was \$1,500 with increases planned each year.

Personnel

Ruth Gates was hired as the new Fish Culturist I. This is a new position replacing our temporary position. Art Westrope and Floyd Shriner were Assistant Managers at the Dayton and Cottonwood ponds, respectively. Orville Bramer transported fish to conditioning ponds and other receiving waters for Spring smolt releases. We also continued our YCC program with a three person crew. They were Carrie Freeman, Jessie Norton, and Kattie James.

Table 4. Food Fed and Weight Gain for all Species at Lyons Ferry Hatchery.

SUMMER STEELHEAD

<u>SPECIES</u>	<u>BROOD YEAR</u>	<u>LBS FOOD FED</u>	<u>GAIN</u>	<u>CONVERSION</u>
Lyons Ferry	1990	35,733	34,993	1.02
Wallowa	1989	45,531	43,663	1.04
Wallowa	1990	6,520	5,627	1.16
Ringold/Wells	1989	83,461	60,901	1.37
Pahsimeroi	1989	58,304	49,608	1.18
TOTAL (All Steelhead 89-90)		229,549	194,792	1.18

RAINBOW TROUT

Spokane	1988	400	1,17	0.34
Spokane	1989	23,361	26,321	0.89
Goldendale	1988	26,107	25,262	1.03
TOTAL (All Rainbow 88-89)		49,868	52,757	0.95
TOTAL ALL SPECIES		279,417	247,579	1.13

1989 STOCKING DATA FOR LYONS FERRY TROUT HATCHERY

Table 5.

SUMMER-RUN STEELHEAD SMOLTS

<u>LOCATION</u>	<u>BROOD YEAR</u>	<u>NUMBER of TRIPS</u>	<u>NUMBER of FISH</u>	<u>WEIGHT of FISH</u>
<u>PAHISEMORI</u>				
Asotin Cr.	1989	6	137,847	26,880
Snake R.	1989	3	43,479	7,730
Tucannon R.	1989	2	40,012	7,210
Tucannon R. (Curl Lk.)	1989	2	79,252	11,323
<u>RINGOLD/WELLS</u>				
Mill Cr.	1989	2	32,200	9,000
Touchet (Dayton P.)	1989	5	109,745	31,356
Touchet R.	1989	1	6,600	2,000
Walla Walla R.	1989	8	130,217	34,619
<u>WALLOWA'S</u>				
Cottonwood P.	1989	7	239,000	47,340
SUB TOTAL		36	818,352	177,458
SUMMER STEELHEAD SUB-SMOLTS				
<u>LYONS FERRY</u>				
Rock Lk.	1990	4	227,632	3,490
TOTAL (Steelhead 1989-1990)		40	1,045,984	180,948

RAINBOW TROUT (LEGAL SIZE)

<u>LOCATION</u>	<u>BROOD YEAR</u>	<u>NUMBER of TRIPS</u>	<u>NUMBER of FISH</u>	<u>WEIGHT of FISH</u>
<u>GOLDENDALE RAINBOW</u>				
Dam Pond	1988	2	2,042	1,087
Pampa Pond	1988	4	5,932	3,225
Orchard Pond	1988	1	1,001	477
Quarry Pond	1988	4	12,350	4,750
Blue Lake	1988	3	5,460	2,600
Deer Lake	1988	3	7,616	3,540
Rainbow Lake	1988	3	7,434	3,540
Spring Lake	1988	4	5,852	2,700
Watson Lake	1988	2	3,822	1,820
Golf Course Pond	1988	3	4,620	2,200
Silcott Pond	1988	1	1,470	700
West Evans Pond	1988	1	1,890	900
Big Flat	1988	2	5,000	2,000
Marmes Pond	1988	1	499	208
Riparia Pond	1988	1	1,001	417
<u>SPOKANE RAINBOW</u>				
Idaho F & G (transfer)	1988		63,005	9,250
SUB TOTAL		35	128,994	39,414
<u>RAINBOW TROUT (SUB-LEGAL SIZE)</u>				
Idaho F & G (transfer)	1989	3	185,430	3,234
Idaho F & G (transfer)	1989	2	62,734	3,605
SUB TOTAL		5	248,164	6,839
TOTAL (All rainbow by 1988-1989)		40	377,158	46,253

ANNUAL REPORT - TUCANNON FISH HATCHERY

OCTOBER 1, 1989 TO SEPTEMBER 30, 1990

CONTRACT NUMBER 14-16-0001-86501 (RWG)

WILLIAM N. HUBBARD - FISH HATCHERY MANAGER III
TUCANNON FISH HATCHERY
POMEROY, WASHINGTON

INTRODUCTION

OPERATIONS:

The Tucannon Hatchery is part of the Lower Snake River Compensation Plan and has been in operation under this plan for five years. It was built in 1949 by the then Washington Department of Game. In 1981, it was turned over to the Army Corps of Engineers and underwent a redesign. It is operated as a satellite of Lyons Ferry Hatchery.

Trapping, holding, spawning, and acclimation of spring chinook salmon are Tucannon's Department of Fisheries responsibilities. A legal size rainbow trout catchable program, plus acclimation of summer run steelhead are Tucannon's Department of Wildlife responsibilities. Curl Lake rearing pond is a satellite of the Tucannon and is used for summer steelhead acclimation. A legal rainbow trout program is operated at this site after the summer steelhead have been released. During this reporting period, the hatchery released in excess of 470,000 fish.

EQUIPMENT PURCHASES:

We replaced 14-year old paper copier with a new xerox, plus a new OMNI FAX machine. A TV and VCR for training purposes were also purchased along with many small purchases to increase efficiency.

CONSTRUCTION AND ENGINEERING PROJECTS:

Our new floating panel weir built last year did not work as designed and expected. High water flows caused it to sink, and it is these very flows that the fish need to return. We worked countless hours trying to modify it to work. We are currently working with an Army Corps of Engineers task force to design, build, and install floating panels that will allow the weir to function properly.

We remodeled the bathroom in residence #1, and finished the unfinished basement of residence #2.

We temporarily fixed deficiencies with pressure boiler and water pressure vessels identified during Labor and Industries Inspection. We also worked with them on new EPA guidelines on underground fuel storage tanks. The current tanks have been issued permits.

Work proceeded with Washington State Department of Ecology on a new National Pollution Discharge Elimination System Discharge Permit. The hatchery had an existing permit, but with changes in the law to meet new EPA guidelines, a new one was required. This will be a two- or three-year process.

FISH PRODUCTION

RAINBOW TROUT (SPOKANE STOCK) BROODYEAR 1988

At the start of the fiscal year (1990) these fish numbered 161,754 and weighed 29,702 pounds. Beginning in March and ending in June of 1990, we planted these fish in a six county area exclusively in lowland lakes and streams. Approximately 160,700 fish weighing 60,925 pounds were planted.

RAINBOW TROUT (SPOKANE STOCK) BROODYEAR 1989

On December 2, 1989, we received 226,800 eyed rainbow eggs from the Washington Department of Wildlife (WDW) Spokane Hatchery. By the end of this fiscal year they numbered 165,310, and weighed 22,631 pounds and will be used for 1991 plants. Idaho Fish and Game received 24,000 rainbow fingerlings weighing 750 pounds in July. This brought our program in line for 1991.

RAINBOW TROUT (SPOKANE STOCK) 1989 IDAHO LATE FRY PROGRAM

The LSRCP Agreement with Idaho Fish and Game obligated us to supply Idaho Fish and Game with 50,000 marked rainbow fry. This obligation was met when we provided Idaho Fish and Game with the rainbow fry at 20 per pound on September 30, 1990. They requested that the fish be this small at that late date because of cold water hatchery conditions. We used the latest take of Spokane stock eggs and it worked so well we will be doing it again next year.

SUMMER RUN STEELHEAD - CURL LAKE (Pahsimeroi Stock) 1988

On March 8-13 1989, 79,252 summer run steelhead weighing 11,323 pounds from Lyons Ferry Wildlife Hatchery were put in Curl Lake Acclimation Pond. While there these fish consumed 4,100 pounds of feed. On April 15, the screens were pulled and fish allowed to migrate. Approximately one-half had gone out on their own by April 27. From April 27 to April 30 we pulled the boards in the pond and forced out the remainder. A total of 79,252 fish weighing 15,850 pounds were released into the Tucannon River from Curl Lake. A test group of 80,000 were released directly into the Tucannon River at Maringo (12 miles below the hatchery) in an evaluation of how effective the acclimation is at Curl Lake.

SPRING CHINOOK SALMON (TUCANNON STOCK) BROODYEAR 1988

During the period November 6-8 1989, approximately 152,928 spring Chinook weighing 8,049 pounds and at 19.0 per pound were transferred from Lyons Ferry and put into the acclimation raceway. Shortly after hauling, these fish tested positive for the fish disease EBIS. There was not much that could be done as they were being acclimated to raw river water. Losses increased when water temperature increased, losses decreased when water cooled. These fish brought up were even smaller than previous years so we were not faced with any environmental problems. Our MDI and FLI were all below 70%. The screens were pulled on April 9, 1989 and the rest of the fish forced out on April 10, 1989. A total of 145,532 at 11.0 per pound and weighing 13,230 pounds were released.

SPRING CHINOOK SALMON (TUCANNON STOCK) 1990 Adults

The Tucannon Hatchery is used to trap hatchery and wild spring chinook from the Tucannon River. Fish not used for spawning purposes are enumerated, released, and allowed to pass upriver. Those adult spring chinook retained are spawned and the eggs transferred to Lyons Ferry Hatchery.

The first adult trapped was on May 7, 1989 and the last adult on September 19, 1990. Jacks continued to show up all month long in July. The fish held well and formaldehyde was used three times weekly at 1:5000 for fungus control for the duration of holding. This treatment for fungus control proved successful and fungus was not a problem. The fish were injected twice for BKD and

Columnaris. This was successful also. The wild fish survived better during holding than the hatchery fish. On August 21, 1989 the first adult was spawned. On September 25, 1990, five spawns later, the last female was spawned. This years' sperm was frozen for later years use, and a lot wild-wild and hatchery-hatchery crosses were made. With having a permanent weir in operation, we saw fish arriving at the hatchery in August and September, just prior to and during spawning time. It is not known if these were Tucannon Hatchery origin fish and holding during the summer below, or strays just arriving.

LATE SUMMER RAINBOW FRY PROGRAM - IDAHO FISH AND GAME
Spokane Stock Latest Eggs - Brood Year 1990

Pounds Gained	1,740
Pounds Fed	1,930
Conversion	1.11
Eggs Received	96,290
Numbers Transferred	63,732
Pounds Transferred	1,740

RAINBOW PRODUCTION - TOTALS

Pounds Gained	53,884
Pounds Fed	64,465
Conversion	1.19
Pounds Planted.	60,295
Pounds Transferred.	750
Numbers Planted	160,701
Numbers Transferred	24,000
Numbers on Hand	161,754
Eggs Received	226,800

SUMMER STEELHEAD PRODUCTION - SMOLTS

Pounds Gained	4,527
Pounds Fed	4,100
Conversion	91
Pounds Planted	15,850
Numbers Planted	79,252

SPRING CHINOOK SALMON PRODUCTION

Pounds Gained	5,181
Pounds Fed	7,700
Conversion	1.48
Pounds Planted	13,230
Numbers Planted	145,532
Adults Passed Upstream.	302 + 26 Jacks
Adults Trapped and Held	126
Jacks Trapped and Held	6
Females Spawned	44
Males Spawned	31
Adult Losses While Holding.	51
Total Egg Take.	147,583

TUCANNON HATCHERY GRAND TOTAL PRODUCTION

Pounds Produced	65,332
Pounds Fed	78,195
Conversion	1.19
Pounds Planted.	91,115
Numbers Planted or Transferred. .	473,217
Numbers on Hand	165,310
Adults Trapped.	454

TUCANNON HATCHERY
1988-1989
Fish Stocked

LOCATION	Brood Year	Number of Trips	Number of # Fish	Weight of Fish
SUMMER RUN STEELHEAD				
(Curl Lake)				
Tucannon River	88	1	79,252	15,850
SPRING CHINOOK SALMON				
(Hatchery Release)				
Tucannon River	88	1	145,532	13,230
RAINBOW TROUT - STREAMS				
Alkali Creek	88	1	540	200
Alpowa Creek	88	1	1,044	360
Asotin Creek	88	1	3,969	1,470
Blue Creek	88	1	609	210
Coppei Creek	88	1	1,479	510
Dry Creek	88	1	1,479	510
Mill Creek	88	1	5,184	1,920
Pataha Creek	88	2	4,148	1,480
Tucannon River	88	4	18,549	6,870
Union Flat Creek	88	1	1,495	575
RAINBOW TROUT - LAKES				
Bakers Pond	88	1	864	320
Big Four Lake	88	1	3,960	1,800
Blue Lake	88	3	10,091	3,710
Casey Pond	88	1	1,102	380
Coles Pond	88	1	1,102	380
College Place Pond	88	2	2,652	960
Curl Lake	88	3	12,376	4,130
Dayton Jv. Pond	88	2	1,972	680
Deer Lake	88	3	10,185	4,110
Evens Pond West	88	3	2,917	1,130
Fishhook Pond	88	2	7,914	2,740
Garfield Pond	88	1	1,530	510
Gilcrest Pond	88	2	3,025	1,085
Golf Course Pond	88	3	6,484	2,510
Headgate Pond	88	2	2,984	1,060
Jefferson Park Pond	88	2	2,652	960
Klemgaard Pond	88	1	2,002	770
Pampa Pond	88	1	2,938	1,130
Quarry Pond	88	3	11,721	4,830
Rainbow Lake	88	4	15,128	5,710
Silcott Pond	88	3	2,917	1,130
Spring Lake	88	3	9,436	3,640
Watson Lake	88	2	6,253	2,515
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GRAND TOTAL		65	385,485	89,375

