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ANNUAL REPORT - LYONS FERRY AND TUCANNON TROUT HATCHERIES  
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## LYONS FERRY HATCHERY

### FISH PROPAGATION

#### Lyons Ferry Summer-run Steelhead

Operation of the fish ladder commenced on August 17, 1987 and ceased on December 14, 1987. A total of 1,201 steelhead returned to the trap. Spawning began February 23, 1988 and continued until March 21, 1988 on a weekly basis. A total of 264 females and 279 males were spawned, producing 941,765 eggs. All fish trapped were checked for various marks and brands. Fish not spawned were returned to the Snake River. The eggs began hatching March 23, 1988 and completed the hatching phase on April 20, 1988. The resultant fry began feeding April 12th. The largest fry were placed outside into raceways on May 25, 1988 at 370/lb. By June 30th a total of 793,240 fry at 133/lb to 225/lb were growing nicely in nine raceways. We shipped 83,542 fish at 11.3/lb to the Tucannon Hatchery on Oct. 27, 1987. March 9th thru 11th, we shipped 128,165 fish at 6.9/lb to the Dayton Acclimation Pond. Then on April 26th & 27th we shipped an additional 42,560 fish at 5.6/lb to the Dayton Pond bringing the total number of fish in the pond to 170,725. Beginning March 8th, we shipped 172,029 fish at 7.5/lb to the Curl Lake Acclimation Pond. The National Marine Fisheries Service in Pasco received 3,007 fish at 6.2/lb from this station on April 22nd. Adipose fin clipping started on August 2, 1988. Fish size at marking ranged from 69/lb to 82.5/lb. Rearing pond #1 was stocked with 310,576 fish at 56/lb on August 15th. Rearing pond #2 was stocked with 333,008 fish at 68/lb on August 16th. Another 2,000 fish at 100/lb were shipped to the National Marine Fisheries in Pasco on Aug. 29th. An extra 53,121 fish at 68.9/lb were shipped to Moses Lake Hatchery on Sept. 14th. We also released 22,116 fish at 68.9/lb into the Snake River on the same day. The Lyons Ferry strain of steelhead did not experience any disease problems over the past year.

#### Skamania Summer-run Steelhead

On Feb. 19, 1988, we received from the Skamania Hatchery 386,563 Skamania stock virus negative summer-run eggs. The size range of the eggs were; 153/oz to 163/oz. Hatching started on February 22nd and was completed on Feb. 28th. The fry started feeding on March 18th. On the 19th & 20th of April, we shipped 298,254 fish at 436/lb to the Department's Moses Lake Hatchery for use in the Ringold program. Disease was not encountered with this group of fish.

#### Walla Walla Summer-run Steelhead

During the week of March 16th thru 24th, we shipped 208,562 fish at 7.72/lb to the Cottonwood Acclimation Pond located on the Grande Ronde River. We received 502,956 eggs at 204 to 225/oz, from the Enterprize Hatchery on May 13, 1988. The hatching phase was completed on May 20th. The fry started feeding on June 6th. On the 25th of July, the hatchery crew moved 430,648 fish at 297 to 304/lb to outside raceways. Adipose fin clipping started on August 24th and was completed on August 30th. The fish ranged in size from 69/lb to 101/lb at marking. Rearing pond #3 was stocked with 299,107 fish at 68/lb to 82/lb on the 27th of September. As disease problems were not encountered, treatment of the fish was unnecessary.

## Rainbow Trout

Spokane Hatchery shipped us 501,700 rainbow eggs at 290/oz on the 28th of December, 1987. That same day, we shipped 210,250 of these eggs to the Tucannon Hatchery. Our eggs had completed the hatching phase by the first week of January. The resultant fry started feeding on the 26th of January. We shipped 7,120 fish at 2.3/lb, from last years program, to Idaho Fish and Game on March 30th. The fry were transferred to raceways on April 6, 1988. Total numbers were; 266,062 fish at 159 to 163/lb. We shipped 99,855 fish at 59/lb to Idaho Fish & Game on May 18th and 19th. Our mitigation rainbow program includes shipping both fry and legals (catchables) to Idaho. Disease problems were not encountered in this stock of fish.

## MAINTENANCE AND OPERATION

In the past year we've had the usual number of alarms caused by power outages and bumps on the line. Each time, the generators started and maintained the pumps as designed. It appears the system is working properly. The fire & maintenance and domestic water supply systems also had their share of alarms. However, there aren't major problems with either system.

October the 10th, 1987, the hatchery crew replaced all flex tubing on the raceway feeders. The original tubing had developed leaks and large splits in several places. Residence #3 experienced a heat-pump failure on Dec. 23rd. Chriss Heating of Walla Walla repaired the pump the next day. The heat pumps in all residences and the hatchery were put on a maintenance & service schedule in August of 1988. Hopefully, this service schedule will eliminate any future problems.

On the 10th of April, pump motor #8 burned out. Fortunately we had another 300 hp pump we could put on line. The burned out motor was sent to Gem Rewind of Lewiston, Idaho for repair. The telemetry system went out again in May and continued to malfunction until July. United Pacific Controls inspected the system and found several telemetry cards inoperative. The cards were sent to Servotone Inc. (Maplewood, New Jersey) for repairs. The telemetry system has not been 100% operational since installation. As a matter of fact, it has worked properly for a period approaching two weeks. As it is not an integral part of the overall pumping operation, the telemetry system remains an inconvenience and not a major problem. The cooling fan motor on pump #8 burned out on Sept. 16th. We purchased a new motor and installed it on the fan. The generators were run under a load for a period of five days, commencing on the 24th of August. This allowed us to check out the entire backup system (diesel engines, generators, etc.). We were able to accurately measure fuel and oil consumption of the diesel engines on an hourly basis. In emergency situations, where the generators are running for an extended period of time, we must add oil to the engines every five to six hours to avoid engine damage. The roadway to the Marmes Pumping Site continues to be a problem. As we have to make the trip from the hatchery to the pumping site after each alarm, to inspect the generators and reset the telemetry board, a roadway in better condition is very desirable. Vehicles take a beating and tires are worn out at an incredible rate. In winter months, the roadway becomes very hazardous to travel.

There were no major problems with the residences over the past year. We did, however, replace and extend the decks on all five residences. The hatchery crew is also installing an underground irrigation system. Hopefully, the project will be completed in early Spring 1989. Carpet in all residences was showing signs of wear (stains, tears, etc.). The hatchery manager opted to replace the living room, dining room and hallway carpet. The replacement carpet was ordered Sept. 10, 1988.

Other than normal maintenance and upkeep, we experienced no problems with any of our vehicles. All other minor equipment appears to be in good operating condition. We did replace a John Deere push type mower with Honda self-propelled model.

#### PERSONNEL

Interviews for the Assistant Manager position at Lyons Ferry Hatchery were started on Oct. 1, 1987. John Penney, former Assistant Manager, promoted to the Manager I position at Turtle Rock. Floyd Schriener was chosen as the new Assistant Manager and moved onto station December 14, 1987. The week before Christmas, Mike Lewis (Fish Culturist I) took a lateral transfer to the Chelan Hatchery. His replacement, Jeff Wendt, moved onto station Jan. 1, 1988. Harald v. Fischer-Benzen (Manager) scheduled his retirement for May 31, 1988. Around mid-May, Harald became ill and was hospitalized. The illness wasn't long in duration, however, it weakened Harald considerably. The Department of Wildlife elected to let Harald remain on station until such time as he regained his strength and would be able to move. Harald (Butch) R. Harty was chosen as his replacement on June 15, 1988. It wasn't until July 20th Butch was moved onto the station. Floyd Schriener and the crew did a very commendable job of operating the hatchery in the interim. In June, Gary Griffen and Jeff Wendt were sent to First Aid & CPR Training Classes.

All in all, it has been a good year. Next year should prove to be an interesting one. With a new manager and a relatively inexperienced crew and with a few repairs to the station by the Corps, the year should prove to be a learning and enlightening one.

LYONS FERRY TROUT HATCHERY  
1987-1988  
FISH STOCKED

<u>Body of Water Stocked</u>	<u>Number of Fish Stocked</u>	<u>Pounds of Fish Stocked</u>
<u>SUMMER-RUN STEELHEAD</u>		
Asotin Creek	28,975	4,750
Grande Ronde River	220,676	45,422
Rock Lake	32,698	623
Snake River	127,233	22,667
Touchet River	170,724	35,942
Walla Walla River	232,916	41,666
<u>RAINBOW TROUT</u>		
Beaver Lake	870	300
Big Four Lake	2,700	1,000
Blue Lake	7,131	2,562
Dalton Lake	5,556	2,435
Dam Pond	900	400
Marmes Pond	1,100	500
Mill Cr. Reservoir	30,432	12,740
Orchards Pond	1,001	556
Pampa Pond	10,925	4,750
Quarry Pond	17,922	6,389
Riparia Pond	3,280	1,600
Rainbow Lake	8,895	3,448
Spring Lake	6,012	2,224
Watson Lake	7,704	2,796

STEELHEAD PRODUCTION  
FY 1987 - 1988

ADULTS TRAPPED

Sept. - 495  
Oct. - 472  
Nov. - 153  
Dec. - 81

Total - 1201

ADULTS SPAWNED

Females - 264  
Males - 279  
Total - 543

EGGS TAKEN

941,765 - Total

3,568 Eggs per female average

Fish Food Consumed

Smolts Produced:	970,341		Type	Pounds
Smolt Release Size:	5.19/lb	Sub-Smolts Produced -	OMP	197,126
Pounds of Fish:	186,862	Size at Transfer -	DRY	23,650
		Pounds of Fish -	TOTAL	220,776

TOTAL STEELHEAD PRODUCTION

POUNDS	188,160
FISH	1,520,251
EGGS TAKEN	941,765 (Lyons Ferry Summer-run Steelhead)
EGGS RECEIVED -	502,956 (Wallowa Summer-run Steelhead)
	386,563 (Skamania Summer-run Steelhead)

RAINBOW TROUT PRODUCTION  
FY 1987 - 88

				<u>FISH FOOD CONSUMED</u>
			Type	Pounds
LEGALS PRODUCED	114,481		OMP	50
SIZE AT RELEASE	2.5/lb		DRY	53,250
POUNDS OF FISH -	45,970		TOTAL	53,275
		SUB-LEGAL PRODUCED -		
		SIZE AT TRANSFER -		
		POUNDS OF FISH -		
				99,885
				59.3/lb
				1,683

TOTAL RAINBOW TROUT PRODUCTION

POUNDS	- 44,401
FISH	- 214,366
EGGS RECEIVED -	501,700 (Spokane Rainbow Trout)
EGGS SHIPPED -	210,250 (Spokane Rainbow to Tucannon Hatchery)

## TUCANNON HATCHERY

### FISH PRODUCTION

#### RAINBOW TROUT (SPOKANE STOCK)

In fiscal year 1986-87 rainbow trout at the Tucannon Hatchery experienced an IHN outbreak. In October, 1987, 83,542 rainbow were received from Lyons Ferry and 25,085 rainbow were received from Ford Hatchery. Lyons Ferry, Ford and Tucannon rainbows (Spokane stock) combined, brought the total fish on hand to 164,632 (15,288 lbs).

Beginning in April, 1988 and ending in June, 164,513 rainbow @ 4.46 fish per pound were planted in lowland lakes and streams. Rainbow consumed 41,320 pounds of feed, and 30,167 pounds of fish was gained.

On December 28, 1987, 210,250 rainbow eggs were received from the Spokane Hatchery.

As a preventive measure against diseases, rainbows were not graded and were fed medicated feeds after handling. These measures were taken to prevent bacterial infections which may be a primary factor leading to an IHN outbreak.

At the end of the fiscal year, 33,630 rainbows are in the round ponds and 124,352 rainbows are in the rearing pond, for a total of 157,982 fish.

#### SUMMER STEELHEAD (LYON'S FERRY STOCK)

On March 9-10, 1988, 161,412 fish or 22,575 pounds of steelhead were received from Lyon's Ferry Hatchery. Steelhead were ponded in Curl Lake conditioning pond. Steelhead consumed 6,200 pounds of feed, gaining 5,711 pounds. Beginning April 28, 1988 and ending May 7, 1988, 161,292 fish or 28,297 pounds of Lyon's Ferry steelhead were released into the Tucannon River.

#### SPRING CHINOOK SALMON (TUCANNON STOCK)

During the period, November 1-12, 1987, 156,654 fish or 11,870 pounds were received from Lyon's Ferry Hatchery.

In March, the salmon pond Density Index (MDI) reached 95-105%, and mortalities increased. Environmental gill disease was found to be the cause. To alleviate the problem, 40,000 fish or 4,000 pounds of chinook were given early release into the Tucannon River. Also, fish were taken off feed and treated with Diquat.

In April, 113,881 fish or 12,514 pounds of chinook were released into the Tucannon River.

Chinook salmon were fed 8,175 pounds of feed, and 4,644 pounds of fish was gained.

Adult chinook trapping began May 3, 1988, and ended July 30, 1988 after trapping 119 adults plus 15 jacks for a total of 134 fish. Of the number trapped 48 females were spawned.

## MAINTENANCE AND OPERATIONS

The past year has been a real success. We have rounded off a lot of the sharp corners and things are going great. The best thing that happened is that we DID NOT come down with IHN. We changed several operating procedures; we did not grade our fish at all, we fed antibiotics everytime we handled the fish, we put them on raw river water at between 20-30 per lb. and hoped it would reach 62-68 degrees which it did, and we did away with the lawn sprinklers that used raw river water.

In the hatchery building we changed several procedures that helped alleviate some losses that were due to Delayed Loss Syndrome. There is an internal fungus that affects the Rainbow 5-10 days after first feeding. We changed the way the water enters the hatchery which lowered the temperature several degrees, plus delayed feeding them for 7 days after swim-up.

The Spring Chinook program went well considering this was our first year at full program acclimation. The fish came up too large and there were too many fish for the size of the acclimation facility. They came down with a classic case of environmental gill disease. We treated with a Diquat bath for 3 weeks and released 1/4 of them early. This worked better. We also had to change the way we treated and held adults, because we didn't get a special permit to use Malachite Green. We used a Formalin flush 1-4000 daily and this worked well at preventing fungus. The fish were injected twice for K-D and once for Columnaris.

Even though we were in a major drought, our wells and springs held up great, this due in part to a lot of work that was done in the clean up contract. I think the capacity of Well #3 can be increased dramatically, it did not drop one inch the whole year. All outside valves worked well and none froze or broke, due in part again to changes made in the last contract.

We had over 120 alarms, due in part to weather and storms, low water and ice, people, and animals. The control panel and senders, stand-by diesel and generator, CREW, all worked Wonderfully!!!!!!! The Corps should be commended!!

Personnel wise with Harold Fisher-Benzon retiring at Lyon's Ferry, a tremendous amount of extra work was created for me. We also lost our Assistant Manager here (Morgan Grant) and promoted Tim Holder to this position, effective Oct. 89. We had lots of training this past year, First Aid, Computer, Fish Disease, Enforcement, Self Defense, Defense Tactics, Pesticide, Divisional School. We were also involved in designing and contracting out a new insulated-aluminum fish hauling tank.

It was an excellent year. With a new assistant mgr. new immediate supervisor, and new LSRCP Coordinator, I must say it was a very interesting one. I am looking forward to next year with great zeal and zest.

### RAINBOW PRODUCTION

POUNDS GAINED.....	42,269
POUNDS FED.....	56,425
CONVERSION.....	1.33
POUNDS PLANTED.....	41,645
NUMBERS PLANTED.....	164,513
NUMBERS ON HAND.....	158,012
EGGS RECEIVED.....	210,250

### SUMMER STEELHEAD PRODUCTION

POUNDS GAINED.....	5,711
POUNDS FED.....	6,200
CONVERSION.....	1.09
POUNDS PLANTED.....	28,297
NUMBERS PLANTED.....	161,292

### SPRING CHINOOK SALMON PRODUCTION

POUNDS GAINED.....	4,644
POUNDS FED.....	8,175
CONVERSION.....	1.76
POUNDS PLANTED.....	16,514
NUMBERS PLANTED.....	153,881
ADULTS PASSED UPSTREAM.....	142
ADULTS TRAPPED & HELD.....	119
JACKS TRAPPED & HELD.....	15
FEMALES SPAWNED.....	48
LOSSES WHILE HOLDING.....	29
TOTAL EGG TAKE.....	182,400

### TUCANNON HATCHERY TOTAL PRODUCTION

POUNDS GAINED.....	52,624
POUNDS FED.....	70,800
CONVERSION.....	1.35
POUNDS PLANTED.....	96,482
NUMBERS PLANTED.....	479,686
NUMBERS ON HAND.....	157,982
ADULTS TRAPPED.....	119

TUCANNON HATCHERY  
1987 - 88  
FISH STOCKED

<u>Water</u>	<u>Number of Fish</u>	<u>Pounds of Fish</u>
<u>Summer Run Steelhead</u>		
Tucannon River	161,292	28,297
<u>Chinook Salmon</u>		
Tucannon River	40,000	4,000
	113,881	12,514
<u>Rainbow Trout-Streams</u>		
Alkali Cr.	816	170
Alpowa Cr.	1,995	464
Asotin Cr.	5,022	1,168
Coppei Cr.	1,607	328
Dry Cr.	1,607	328
Mill Cr.	5,022	1,168
Pataha Cr.	3,925	890
Tucannon R.	22,272	5,440
Union Flat C.	1,632	340
<u>Rainbow Trout-Lakes</u>		
Bakers Pond	1,075	250
Blue L.	6,980	2,096
Casey Pond	1,053	234
Coles Pond	540	120
College Place Pond	1,724	383
Curl L.	13,160	3,738
Dayton Juv. Pond	1,753	389
Evans Pond West	2,865	608
Fishhook Pond	6,426	1,856
Garfield Pond	1,558	472
Gilcrest Pond	1,558	472
Golf Course Pond	4,427	1,275
Headgate Pond	2,920	626
Jefferson Park Pond	1,724	383
Mill Creek Res.	9,612	3,068
Rainbow L.	15,532	4,310
Rock L.	3,696	1,056
Silcott Pond	1,630	326
Sprague L.	18,200	3,640
Spring L.	12,943	3,632
Watson L.	13,892	2,816