



MAGIC VALLEY HATCHERY 1999 Brood Year Report



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ABSTRACT

The 13th year (May 1, 1999 to May 10, 2000) of steelhead *Oncorhynchus mykiss* production at Magic Valley Hatchery (MVH) was completed with a total of 2,050,039 smolts planted. Of that total, an estimated 3,000 fish remained in Squaw Creek Pond to be caught out or planted out as catchables. Therefore, only 2,047,039 A-run and B-run steelhead smolts were stocked where they could migrate to the ocean. These smolts, catchables, and presmolts weighed a combined 490,854 lbs. Fish were fed 589,684 lbs of feed for a conversion of 1.20 lbs of feed per lb of gain.

Five different stocks of steelhead were received as eyed eggs. The Dworshak B-run eggs totaled 1,446,208 and contributed 1,106,133 smolts to the river. The B-run East Fork Salmon River eggs totaled 57,954. All 51,866 of the East Fork fish were planted as smolts. Sawtooth A-run eggs totaled 389,982 and produced 358,025 smolts. Pahsimeroi Fish Hatchery (PFH) contributed 515,375 A-run steelhead eggs. Of those PFH fish, 63,120 were planted as pre-smolts into Roseworth Reservoir along with 418,592 as smolts. Another 174,000 Oxbow Fish Hatchery (OFH) A-run eggs were received. Of those 48,700 were planted as pre-smolts into Salmon Falls Creek Reservoir. The remaining 115,423 were planted as smolts. Further stocking information can be found in Appendix C.

For the third consecutive year Hayspur rainbow and kamloop trout eggs were started here to help Hagerman State Hatchery deal with their shortage of incubation space in the winter. Appendix I summarizes Hayspur egg to fry survival.

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INTRODUCTION

Magic Valley Hatchery (MVH) is part of the Lower Snake River Fish and Wildlife Compensation Plan (LSRCP), compensating for losses of steelhead *Oncorhynchus mykiss* caused by the Lower Snake River dams. The hatchery was constructed by the US Army Corps of Engineers (USACE); is administered and funded by the US Fish and Wildlife Service (USFWS); and operated by the Idaho Department of Fish and Game (Department).

The hatchery is located in Twin Falls County, seven miles northwest of Filer in the Snake River Canyon. The hatchery uses a maximum 125 cubic feet per second (cfs) of 59°F water from Crystal Springs located on the north shore of the Snake River.

All smolts were transported by truck to the Salmon River and tributaries. The brood sources were Dworshak Fish Hatchery (Dworshak) B-run stock, East Fork Salmon River B-run stock, Oxbow Fish Hatchery (Oxbow) A-run, and Pahsimeroi Fish Hatchery (Pahsimeroi) A-run stock.

Fish health was good again this year with no major fish mortalities or drug treatments.

OBJECTIVES

1. Hatch and rear two million A-run and B-run steelhead smolts for stocking in the Salmon River, and its tributaries, to achieve the mitigation goal of 11,660 adult steelhead back to Idaho waters.
2. Provide smolts, and consequently, returning adults that can be utilized for harvest, broodstock, supplementation, reintroduction, and research purposes.
3. Mark hatchery smolts prior to release to avoid mixed stock harvest and to maximize harvest and natural production management options.

FACILITIES

The hatchery building houses the incubation and early rearing room with 40 upwelling 12 gal capacity incubators. Each incubator is capable of handling and hatching 50,000-75,000 eyed eggs. Two incubators are placed over each raceway. There are 20 concrete tanks (4-ft x 3-ft x 40-ft, with 418 cubic feet [cu ft] of rearing space) with a capacity of rearing 115,000-125,000 steelhead to 200 fish per lb (fpp) size. The early rearing room also houses two fiberglass troughs (2-ft x 1-ft x 12-ft) and 60 automatic fry feeders. The hatchery building also contains an office, laboratory, wet laboratory, shop, dormitory, enclosed storage room, covered vehicle storage area, feed storage room, walk-in freezer, and mechanical room for water pumps, water chiller, and domestic water supply systems.

There are 32 outside rearing raceways (10-ft x 3-ft x 200-ft), with 6,153 cu ft of rearing space. These raceways slope in opposite directions, resulting in 16 East raceways and 16 West raceways. Each raceway has the capacity to raise 60,000-70,000 smolt-size steelhead. The raceways may be further divided to result in a total of 64 individual rearing subunits. A moveable

bridge equipped with 16 automatic Neilsen fish feeders spans the outdoor raceways. Two 30,000-lb bulk feed bins equipped with fish feed fines shakers and a feed conveyor complete the outside feeding system.

There are two outside tailraces located on opposite ends of the facility. Each flows to the north where they join in a common 54-in pipe before entering the flow-through settling pond. The hatchery effluent water is treated by opening valves in the bottom of quiescent zone and sweeping wastes into a cleaning wastewater pond (approximately 2.5 surface acres). A hatchery flow-through wastewater pond (about 1.5 surface acres in size) settles the non-cleaning wastewater. All cleaning effluent must pass through both ponds.

The limiting factors in producing more smolts at MVH are space and water flows. Density and flow indices may exceed the maximum desired levels of .30 lbs of fish per cu ft of rearing space per inch of fish length, and 1.25 lbs per gal per minute (gpm) per inch of fish length at the end of the rearing cycle. Water flows have increased in recent years and have approached the 125 cfs maximum on several occasions. However, high flows are in the 110 to 120 cfs range normally.

WATER SUPPLY

The MVH water supply collection facility is located on the north wall of the Snake River canyon. It collects the 59°F spring water from Crystal Springs in a covered concrete channel system, which consolidates the flow in a metal building. A 42-in pipeline delivers the 125.47 cfs of water via gravity flow to a control tank that degasses and distributes the water to the outside raceways. Water may be diverted from the headrace supply line for use in the auxiliary supply water lines. The auxiliary supply line allows supplemental water usage between raceway sections to improve water quality in the lower sections, and to clean upper quiescent zones without dewatering the bottom section. The hatchery building receives water through a 14-in pipeline that branches off prior to going through the outside degassing tower. Water going to the hatchery building is degassed in packed columns above each individual raceway.

STAFFING

During the 1999 brood year, MVH was staffed with four permanent employees: Bob Moore, Fish Hatchery Manager II; Dave May, Assistant Hatchery Manager; and Mark Olson and Damon Keen, Fish Culturists. In addition, temporary Bio-aides or Laborers are sometimes hired to assist with fish culture duties during peak production, smolt transportation, and adipose (AD) fin clipping. Our Bio-aide at the beginning of this brood year was Mary Rosen. She left in October of 1999 and was replaced by Jes Erling in March 2000. Personnel from this hatchery continue to oversee adipose marking operations at the Niagara Springs and Magic Valley hatcheries. However, this year the coded wire tagging (CWT) crew did all of the adipose marking as well as the CWT tagging at Hagerman National Fish Hatchery.

FISH PRODUCTION

Egg Shipments and Early Rearing

The hatchery received 1,446,208 B-run (Dworshak) eyed eggs and 57,954 B-run eyed eggs (East Fork Salmon River stock). A-run eyed eggs included 515,375 (Pahsimeroi), 174,000 (Oxbow), and 389,982 (Sawtooth). The grand total of steelhead eggs received this year was 2,583,519. All eggs were received in April, May, and June 1999. The survival of eyed eggs to smolts is shown in Appendix A.

All eggs received were treated with Povidone-Iodine at 100-ppm for ten minutes, enumerated and put into the upwelling incubators (50,000-75,000 eggs per incubator, 15 gpm). The eggs hatched within five days and emerged from the incubators into the hatchery tanks twelve days after hatching. Each of the 20 hatchery tanks (with a flow of 100-250 gpm) averaged 120,000 feeding fry until they reached 300 fpp or measured almost two inches long. At that time, fish were moved to the larger outside raceways. The highest mortality rate occurred during the hatching, swim-up, and early-rearing stages. For the second year survival was comparable in all stocks of eggs. The Dworshak eggs generally survive at a much lower rate than in the other stocks.

Final Production Rearing

Fish were fed Rangen 440 extruded salmon diet using Haskell's 1967 feeding rate formula. The feeding rate was calculated using a 10.0 hatchery constant. Fish were started on feed as one-inch swim-up fry and hatchery growth ended with an approximate 8.3-in smolt. The fish had a conversion of 1.2 lbs of feed to produce one lb of fish.

Generally, about an inch of growth per month for the first three months is achieved when the fish are fed every day. An intermittent schedule of five days on and two days off feed was implemented in October to insure that fish met target size. The steelhead maintained an average .65 to .75-in per month growth using this system. This schedule was used through the middle of March, at which time all fish were put on feed seven days a week. See Appendix B for feed and total costs for the year.

Piper's 1970 formulas for density and flow indices were used to calculate densities and flows for each tank or raceway. In some raceways, the desired density index of .30 or 1.25 flow index was not reached until the end of March. The final pond inventories and indices for the individual raceway numbers, densities, and flows are found in Appendix D.

Maximum flows for the year were around 120 cfs from October through March. The majority of the time flows were recorded around 100-110 cfs. Each of the outside 32 raceways had about 3.4 cfs prior to distribution in April.

Steelhead smolt distribution began on April 11, 1999 and continued five days a week through May 10, 1999. An average of five trucks per day was used for the transportation of 477,250 lbs of fish and involved 98 truckloads (Appendix C). This year we continued to haul 5,000 lbs per load to meet IHOT (Integrated Hatcheries Operation Team) recommendations

Length Frequency Data

Length frequencies were taken from all stocks again this year and are shown in Appendix H.

FISH HEALTH

Fish health at MVH was exceptionally good for BY99. Mortalities from etiologic agents were not in epizootic proportions and thus did not warrant medicated-feed treatments.

No acute losses were experienced at this facility in 1999. No chronic losses were experienced at MVH during 1999.

Precocial Male Observation

A precocious male study was implemented on several raceways at MVH. This study proposed to ascertain the effect of coded wire tags (CWT) on precosity. The first group of fish were merely anesthetized and counted back into the raceway. The second group had the needle of the CWT machine inserted into the nose of the fish. A third group had non-magnetized wire inserted into the nose of the fish. The fourth group received magnetized blank wire to simulate a regular CWT tag. Each group consisted of 5,000 fish and were all treated identically during rearing. One hundred and fifty fish per raceway were sampled to obtain precosity data. The lowest prevalence of precocious males was in the magnetized CWT raceway. Amazingly enough, the highest precocial levels were in raceway 2E, which were had only been taken into the tagging trailer anesthetized and counted. One might conclude that CWT-tagging does not cause an increase of precocialism. However, the results hardly seem reasonable. Perhaps the act of heavily anesthetizing the fish to make this operation feasible has a detrimental effect on the fish. The experiment will be repeated in Brood Year 2000 to see if results can be duplicated.

In past years there seemed to have been a direct relationship between the incidence of precocial males and the proximity of the fish to security yard lights. These nearby security lights have been turned off.

FISH MARKING

Normally, all of the A-run and B-run hatchery steelhead are required to have an adipose fin-clip distinguishing them from wild steelhead. However, this year was the first year that we reared some for supplementation releases for the Nez Perce tribe. A total of 278,200 were set aside in East raceways 13-16 to produce approximately 240,000 unmarked fish for release. At MVH the fin clipping crew Ad-marked 1,992,932 fish during September. Fin-clipping mortality was negligible. No treatment was necessary after handling.

Only two groups of steelhead were coded-wire-tagged in brood year 1999. There were 328,424 fish marked with the coded-wire-tag (CWT) and 310,170 of those were stocked. See Appendix F for CWT details.

Together, both A and B stocks had a total of 2,398 Passive Integrated Transponder (PIT) tags inserted in them. Only four mortalities were discovered in those fish resulting in 2,393 PIT tagged fish being released. In addition 300 fish were PIT-tagged at Squaw Creek Pond. See Appendix F for details.

MAINTENANCE PROJECTS

During the year, the following projects were completed.

1. Removed the living room storage closet in residence # 2.
2. Trimmed shrubs around the perimeter of residence # 2 in preparation for exterior painting.
3. Painted the exteriors of residences #2 and #4.
4. Received a gas-operated forklift from the Lookingglass Hatchery and returned the electric forklift to the Eagle truck shop.
5. Hatchery personnel fabricated a fish pump lift system for the new forklift.
6. Received heavy-duty shelves from Federal surplus.
7. Three-phase electric outlets were installed in the incubation room.
8. Received two large storage containers from Federal surplus.
9. Received flammable materials safety cabinets from Federal surplus.
10. Installed a new axle and rebuilt drive wheel on the travelling bridge.
11. Installed a new dishwasher in residence #4.
12. Installed two new 3-inch intake valves in the incubation room.
13. Removed deteriorated bird netting from the production raceways.

LITERATURE CITED

Haskell, D.C. 1967. Calculations of amounts to feed trout in hatcheries. *Progressive Fish Culturist* 19 (4): 194 pp.

Piper, R.G. 1970a. Know the proper carrying capacities of your farm. *American Fishes and U.S. Trout News* 15 (1): 4 pp.

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APPENDICES

Appendix A. Brood Year 1999 Steelhead Survival Rates.

	DWORSHAK "B"	EAST FORK "B"	PAHSIMEROI "A"	SAWTOOTH "A"	OXBOW "A"	GRAND TOTAL
EGGS	1,446,208	57,954	515,375	389,982	174,000	2,583,519
% HATCHED	87%	97%	99%	99%	98%	96%
SMOLTS STOCKED	1,106,133	51,866	418,592	358,025	115,423	2,050,039
WEIGHT SMOLTS	259,950	13,150	102,075	84,000	27,100	486,275
NUMBER AS CATCHABLES*	3,000	0	0	0	0	3,000
CATCHABLE WEIGHT*	700	0	0	0	0	700
NO./LB.	4.3	3.9	4.0	4.3	4.3	4.2
PRESMOLTS STOCKED	0	0	63,120	0	48,700	111,820
PRESMOLT WEIGHT IN LBS	0	0	2,600	0	1,975	4,575
TOTAL NUMBER RELEASED	1,109,133	51,866	481,712	358,025	164,123	2,164,859
TOTAL WEIGHT	259,954	13,150	104,675	84,000	29,075	490,854
% SURVIVAL						
EGG/RELEASE	77%	89%	93%	92%	94%	84%
LBS OF FOOD	348,452	13,570	102,770	94,795	30,097	589,684
CONVERSION	1.34	1.03	0.98	1.13	1.04	1.20

*These fish were nonmigrant smolts that were removed from Squaw Creek Pond and utilized as catchable rainbow trout plants.

Appendix B. Brood Year 1999 Production Feed Cost And Utilization.

Number Of Fish	2,050,039
Lbs Of Fish	486,275
Lbs Of Feed	589,684
Conversion	1.20
Feed Cost	\$ 169,102.04
Total Cost	\$ 554,625.53
Feed Cost/Lb. Fish	\$ 0.3477
Cost Per 1000 Fish	\$ 271.27

Appendix C. Steelhead Smolt Distribution in the Salmon River and Tributaries.

Date	Site	Number Released	Stock	Fish/ Lb	Lbs
4/11-12/00	Little Salmon R (Stinky Sp)	115,423	A	4.3	27,100
4/11-27/00	Little Salmon R (Stinky Sp)	300,523	B	4.1	72,800
4/12-21/00	Salmon R (Lemhi Hole)	137,407	A	4.0	34,350
4/12/00	Salmon R (Red Rock)	62,670	A	4.2	15,000
4/17/00	Salmon R (Lewis and Clark)	61,732	A	4.1	15,000
4/17/00	Salmon R (Wagonhammer)	41,091	A	4.1	10,000
4/14/00	Salmon R (Shoup Bridge)	67,928	A	4.3	15,925
4/18/00	Salmon R (Eye Hole)	21,500	A	4.3	5,000
4/18/00	Salmon R (Kilpatrick)	21,500	A	4.3	5,000
4/18/00	Salmon R (Colston Corner)	20,625	A	4.1	5,000
4/20-21/00	Salmon R (Tunnel Rock)	108,673	A	4.3	25,350
4/18-21/00	Salmon R (McNabb Point)	105,578	A	4.2	25,000
4/14-21/00	Salmon R (Cottonwood)	82,172	A	4.2	19,850
4/13-24/00	Salmon R (Challis Ramp)	45,741	A	4.3	10,600
4/27-5/2/00	East Fork Salmon River	239,981	B	4.4	54,850
4/10-6/8/00	Squaw Creek Pond	106,135	B	4.3	24,050
4/20-5/8/00	Squaw Creek	245,502	B	4.3	56,600
5/3-9/00	Newsome Creek	100,078	B	4.3	24,300
5/5-9/00	American River	96,187	B	4.3	22,800
5/2/00	Mill Creek	19,556	B	4.3	5,000
5/10/00	Red River	30,480	B	4.3	7,700
5/2/00	Meadow Creek	19,557	B	4.3	5,000
	Total A's	892,040		4.2	213,175
	Total B's	1,157,999		4.2	273,100
	GRAND TOTALS	2,050,039		4.2	486,275

Appendix D. Final Raceway Inventory with Flow and Density Indices for 1999 Brood Year.

Raceway	Run	Number	Weight	No/Lb	Length	Flow Index	Density Index
E1	DWOR B	66,092	15,000	4.4	8.38	1.33	0.33
E2	DWOR B	65,312	17,050	3.8	8.79	1.44	0.36
E3	DWOR B	63,051	14,600	4.3	8.44	1.28	0.32
E4	DWOR B	64,061	14,300	4.5	8.34	1.27	0.32
E5	DWOR B	64,243	15,100	4.3	8.48	1.32	0.33
E6	DWOR B	66,180	13,750	4.8	8.14	1.25	0.31
E7	DWOR B	66,175	15,250	4.3	8.43	1.34	0.34
E8	DWOR B	66,211	16,700	4.0	8.69	1.42	0.36
E9	DWOR B	66,214	14,500	4.6	8.29	1.30	0.33
E10	DWOR B	62,582	13,950	4.5	8.33	1.24	0.31
E11	DWOR B	62,507	13,800	4.5	8.31	1.23	0.31
E12	DWOR B	61,852	14,450	4.3	8.47	1.26	0.32
E13	DWOR B	66,478	15,800	4.2	8.51	1.37	0.35
E14	DWOR B	66,487	15,300	4.3	8.42	1.35	0.34
E15	DWOR B	66,413	17,000	3.9	8.73	1.44	0.36
E16	DWOR B	66,480	16,700	4.0	8.67	1.43	0.36
W1	EFK B	51,866	13,150	3.9	8.70	1.12	0.28
W2	DWOR B	65,795	16,700	3.9	8.70	1.42	0.36
W3	DWOR B	63,354	14,700	4.3	8.45	1.29	0.32
W4	SAW A	66,898	16,000	4.2	8.53	1.39	0.35
W5	SAW A	67,107	15,350	4.4	8.41	1.35	0.34
W6	SAW A	66,520	15,800	4.2	8.51	1.37	0.35
W7	SAW A	67,123	15,600	4.3	8.45	1.37	0.34
W8	PAH A/SAW A	60,647	14,700	4.1	8.60	1.27	0.32
W9	PAH A	60,476	14,650	4.1	8.60	1.27	0.32
W10	PAH A	65,611	16,050	4.1	8.60	1.38	0.35
W11	PAH A	61,594	14,375	4.3	8.45	1.22	0.31
W12	PAH A	67,489	15,850	4.3	8.48	1.38	0.35
W13	PAH A	64,200	17,300	3.7	8.88	1.44	0.36
W14	PAH A	65,598	15,700	4.2	8.53	1.36	0.34
W15	OXBOW A	57,876	13,300	4.4	8.42	1.17	0.29
W16	OXBOW A	57,547	13,800	4.2	8.54	1.20	0.30
TOTALS		2,050,039	486,275	4.2	8.52	1.32	0.33

Appendix E. Organosomatic Index Expressed in Percent of Normals

Date	Stock	Eyes	Gills	Pseudo-Branch	Thymus	Mesentery Fat	Spleen	Hind Gut	Kidney	Liver
3/30/00	Saw A	100	100	100	100	100	100	100	100	100
3/30/00	Pah A	100	100	100	100	100	100	100	100	100
3/30/00	EFK.	100	100	100	100	100	100	100	100	100
4/7/00	Oxbow A	100	100	100	100	100	100	100	100	100
4/7/00	Dwor. B	100	100	100	100	100	100	100	100	100

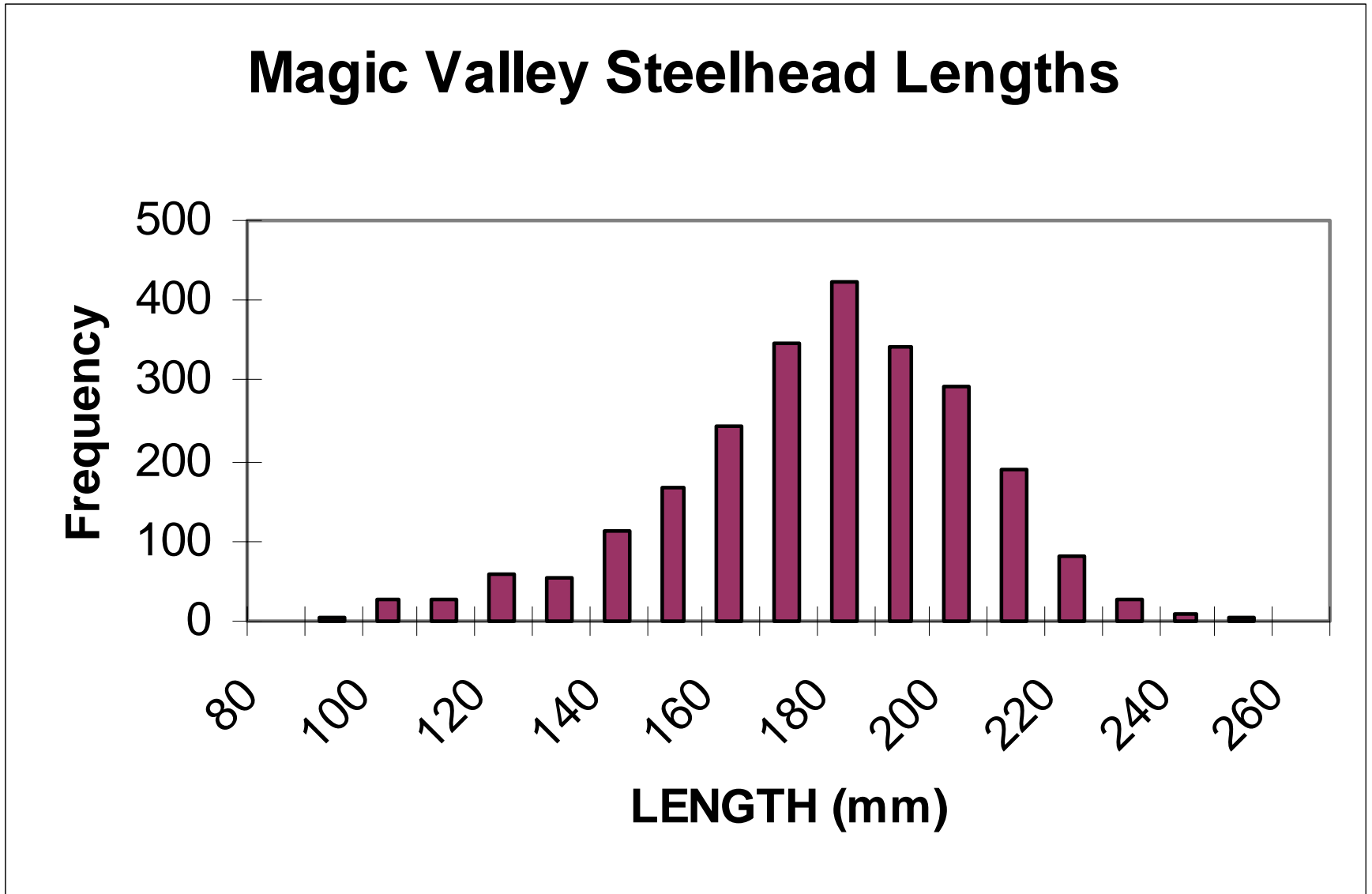
Appendix F. Brood Year 1999 Coded-Wire Releases

CWT Code	Stock	Number CWT	CWTs Stocked	PIT Tag	Site & Purpose	Raceway #
10/36/05	Dwor-B	63,851	60,337	300	L.Salmon @ Stinky Sp	2 East
Control-no CWT		0	0	No	L.Salmon @ Stinky Sp	2 East*
No CWT	Dwor-B	0	N/A	No	Precocial Study	3 East*
Blank	Dwor-B	0	N/A	No	Precocial Study	4East*
Blank	Dwor-B	0	N/A	No	Precocial Study	5 East*
10/54/13	Dwor-B					10 East
10/46/47	Dwor-B	66,215	62,580	300	Squaw Creek	10 East
No CWT	Dwor-B	0		300	Newsome Creek	13 East
No CWT	Dwor-B	0		300	American River	14 East
10/54/14	Pah-A	0				11 West
10/46/48	Pah-A	64,305	61,594	298	Salmon R @ Shoup Br	11 West
10/36/06	Pah-A	67,412	64,200	300	Salmon R @ Lemhi H	13 West
10/48/29	Saw-A				Salmon R @ Tunnel Rock	
10/54/15	Saw-A	66,641	61,459	297	Salmon R @ Tunnel Rock	3 West
No CWT	Efk-B	0	0	299	Squaw Creek	1 West
TOTALS		328,424	310,170	2,394		

*These raceways had 5,000 fish in the top 25-foot section. They were part of an experiment to determine the effect of various tagging treatments upon precocial male rates. Raceway 2E had fish taken to trailer anesthetized and ad-clipped, 3E was additionally poked in the nose with the tag machine needle, 4E received a non-magnetized CWT, and 5E was given a blank magnetized CWT. Squaw Creek Pond fish (not shown here) received 300 PIT tags on site.

Appendix G. Historical Release Data.

Year	Combined A-run Eggs	East Fork B-run Eggs	Dworshak B-run Eggs	Total Eggs	Spring/Smolt Releases	Fall/Fry Releases	Total Fish Released	Fish per Lb	Lbs Released	Lbs Feed
1982-83				145,206	135,361		135,361	4.23	32,000	57,700
1983-84	238,000		68,000		264,574		264,574	2.77	95,430	154,120
1984-85				NONE	231,991		231,991	4.37	52,990	HNFH
1985-86				NONE	NONE				-	
1986-87				NONE	264,415		264,415	4.39	60,215	HNFH
1987-88		FRY		2,109,780	2,064,661		2,064,661	4.54	454,500	554,000
1988-89	2,047,748	357,506		2,405,254	2,202,800		2,202,800	4.32	509,100	703,373
1989-90	1,306,674	333,537	1,212,066	2,852,277	2,285,800		2,285,800	4.67	489,430	687,077
1990-91	1,269,000	463,730	900,000	2,632,730	2,062,000		2,062,000	4.11	501,100	662,326
1991-92	1,127,928	91,317	1,207,699	2,426,944	2,160,400		2,160,400	4.21	513,000	624,573
1992-93	1,031,274	133,826	1,322,740	2,487,840	1,925,700		1,925,700	5.75	334,500	529,936
1993-94	1,081,500	179,080	1,507,033	2,767,613	1,919,250	392,300	2,311,550	4.73	405,450	654,693
1994-95	800,785	75,395	1,520,160	2,396,340	1,731,355	26,531	1,757,886	4.41	391,825	548,400
1995-96	803,000	40,000	1,502,200	2,345,200	1,868,085		1,868,085	4.63	402,926	453,662
1996-97	947,796	139,400	940,391	2,027,587	1,643,210		1,643,210	4.50	364,775	380,647
1997-98	855,000	356,340	1,403,900	2,615,240	1,658,825		1,658,825	4.47	370,900	419,222
1998-99	1,010,540	7,700	1,287,712	2,305,952	1,962,624	106,950	2,069,574	4.12	471,608	574,392
1999-00	1,052,109	57,954	1,340,756	2,450,819	2,050,039	111,820	2,164,859	4.22	490,850	589,434



Appendix I. Hayspur Rainbow and Kamloop Trout started for Hagerman State Hatchery.

Hayspur Eggs Received at Magic Valley Hatchery

Date	Vat #	Egg #	Stock	Moved to Hagerman			Number	Pct Survival
				Date	Lbs	No./Lb		Eggs
11/22/99	11	72,899	K1	2/4/00	1100	105	115,500	79%
11/22/99	12	72,899	K1	2/5/00			0	
11/22/99	13	107,921	K1	2/6/00			0	
11/22/99	14	77,500	K1	2/7/00	1350	125	168,750	64%
11/22/99	15	77,500	K1	2/8/00			0	
11/22/99	16	85,450	R9	2/9/00	690	96	66,240	78%
11/22/99	17	85,450	R9	2/9/00	650	101	65,650	77%
11/22/99	18	85,450	R9	2/9/00	650	102	66,300	78%
11/22/99	19	85,450	R9	2/9/00	675	115	77,625	91%
11/29/99	20	80,952	R9-4	2/9/00	500	115	57,500	71%
11/29/99	10	65,265	R9-2	2/9/00	400	135	54,000	83%
11/29/99	9	65,265	R9-2	2/9/00	400	145	58,000	89%
12/27/99	7	86,250	R9	3/3/00	430	153	65,790	76%
12/27/99	8	86,250	R9	3/3/00	450	149	67,050	78%
12/27/99	6	57,391	R9	3/3/00	250	177	44,250	77%
12/27/99	1	49,000	K1	3/3/00	233	163	37,979	78%
1/18/00	3	81,833	R9-3	3/31/00	475	151	71,725	88%
1/18/00	4	78,416	R9-5	3/31/00	500	142	71,000	91%
1/18/00	5	78,416	R9-5	3/31/00	475	130	61,750	79%
GRANDTOTAL		1,479,557					1,149,109	78%
TOTAL	R9	1,021,838					826,880	81%
TOTAL	K1	457,719					322,229	70%

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