CLARK FORK HATCHERY

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By
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ABSTRACT

The kokanee trap was installed in Sullivan Spring on October 25, with the first fish entering the trap the same day. Actual spawning activity started on November 7 and ended on December 28, at which time all available incubators were filled to capacity. The egg take for the season totaled 15 million eggs. Some four million were kept at Clark Fork Hatchery. Projections based on past data of releases and returns reflected approximately two million eggs still were available in the creek.

The wild Kamloops operation was scaled down this year. Hatchery crews did not fish the river as in past years. Instead, efforts were directed at capturing fish in Spring Creek by seining. Fish and redds started showing up the end of April and efforts produced 10 fish and 15,000 eggs.

Westslope cutthroat were spawned from April 29 to June 13. Hatchery crews took approximately 650,000 eggs from four-year-old fish, and 63,000 eggs from three-year-old fish. A Merwin Trap was installed in Kerr Lake, but only one cutthroat was captured.

From April to September, the hatchery crew planted 92,735 catchable size rainbow, 925,999 westslope cutthroat, 20,086 domestic Kamloops, 1,545 Kootenai rainbow broodstock, 684,202 brown trout, 3,338,321 kokanee, 15,272 channel catfish and 2,540 smalimouth bass.

Hatchery personnel also assisted Dan Beers with some mountain lake plants.

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INTRODUCTION

Clark Fork Hatchery is located approximately 1.7 mi north of the town of Clark Fork on Spring Creek Road. It receives its water supply from Spring Creek, and requires eight cfs of water to operate. The hatchery has four large raceways (12' x 319'), with three sections/raceway and approximately 2,470 cubic feet/section. With all four in operation, the hatchery has a flow of 1.45 cfs/pond. There are two medium size raceways (6' x 116') and six small raceways (6' x 53') with a 540 cubic feet capacity and a possible flow of .33 cfs. The hatchery has four earthen broodstock ponds consisting of three sections each, with a capacity of 2,202 cubic feet/section and a flow of 1.5 cfs each. The hatchery building contains 10 concrete vats of 60.5 cubic feet each and flows of .12 cfs each. There are 17 fiberglass troughs, 16.6 cubic feet each, with flows of .025 cfs. The hatchery is capable of raising 40,000 lb of fish and producing 4,000,000 eggs at full capacity annually.

The water flow fluctuates from a high of 11 cfs to a low of 3 cfs during late summer and early fall. This results in a reduction in production capabilities. In addition to the hatchery, there is a kokanee trapping facility located at Sullivan Spring on Granite Creek approximately 30 mi from the hatchery site. This facility is capable of producing 10 to 15 million eggs annually.

OBJECTIVES

The objectives of Clark Fork Hatchery are to:

1. Raise westslope cutthroat broodstock and plant 350,000 size-2 cutthroat annually.

2. Take as many kokanee eggs as possible and plant 3.5 million size-1 late kokanee annually.

3. Redistribute catchable size rainbow trout statewide to streams, lakes and reservoirs as needed.

FISH HEALTH

The following diseases were diagnosed at Clark Fork Hatchery this past year: 1) visceral mycosis (internal fungus), 2) nutritional deficiency, 3) epithelial cystis, and 4) bacterial kidney disease (BKD).

Adult westslope cutthroat and kokanee spawners were sampled for viral infections during the spawning season. Pat Chapman, who has provided disease diagnostic services whenever necessary, received assistance from Doug Ramsey during collection of the samples. All fish tested were negative.

There were two extraordinary fish losses this past year. The first occurred in the kokanee fry, where approximately 30,000 fish were lost to visceral mycosis. The second occurred in the cutthroat fry, where approximately 30,000 fish were lost to nutritional deficiency.

EXPERIMENTS

Two experiments were conducted at Clark Fork Hatchery this year. In the first experiment, water hardening eggs were placed in solutions containing different concentrations of the idophore argentyne. We measured three lots, each containing 120 oz of kokanee eggs, which were water-hardened in argentyne at concentrations of 1:50, 1:100 and 1:200, respectively. Corresponding control groups of 120 oz of eggs from the same three lots were set aside for direct comparisons to determine any effects argentyne has on premature hatch, crippling deformities and ultimately the control of infectious pancreatic necrosis (IPN) virus in kokanee fry. Results showed better survival at the highest concentration and lowest survival at the 1:100 concentration There were no increases noted in deformities, premature hatch, or crippling loss. As for IPN prevention, no logical conclusions could be drawn because the parent stock was negative after testing.

The second experiment used late spawning kokanee eggs. The hatchery was directed to test various types of incubators for possible use at the Cabinet Gorge Hatchery upon its completion. Hatchery personnel tested a square upwelling incubator with clear Plexiglas sides, measuring approximately 11" x 11.5" and 24" tall. They also tested a round PVC upwelling incubator, measuring 12" in diameter and 24" tall. Two Heath trays were used as controls. We wanted to determine what problems could develop during incubation from green egg to swim-up and the percent eye-up that could be expected.

Considerable amounts of silt and algae accumulated in all incubators, including the Heath trays. The eggs did not look good upon visual observation, but reasonable eye-up percentages were achieved. The square unit achieved 86%, the round unit achieved 89.7% and the control in the Heath trays achieved 95%. In conclusion, upweller incubators would work best at the Cabinet Gorge facility, where wells are the water source, because these should be free from silt and algae.

HATCHERY IMPROVEMENTS

More upgrading of hatchery residences was completed this year. Residence #2 received the most attention: a new hot water tank was installed and the chimney for the wood stove was repaired to stop the creosote from dripping into the living room.

In the hatchery building, the 10 concrete vats were scraped and repainted. The header pipe supplying water to these tanks was also scraped and repainted.

HATCHERY NEEDS

The highest priority is to obtain a well capable of producing enough water to operate 10 double stacks of Heath incubators. This would eliminate the silt and algae problem encountered during spring incubation. Next, all buildings on the station need a fresh coat of paint and the garage next to Residence #1 needs a new metal roof. The existing roof is rusted and detracts from the appearance of the hatchery.

MISCELLANEOUS

The naval research facility at Bayview at the south end of Lake Pend Oreille was helpful again this year by providing boats for transportation to and from the Granite Creek spawning site during the kokanee spawning run. Research made the trawler available for our use toward the end of the run. With the winches removed, the trawler proved to be a comfortable mode of water transport.

This year's kokanee egg take was one of the largest on record. Spawning crews took 15,000,000 eggs from approximately 122,000 fish during the months of November and December. Region 1 personnel were very helpful this year, serving as relief trap tenders and spawntakers. The three northern hatcheries--Clark Fork, Mullan and Sandpoint--had the capacity to hold approximately 11.5 million eggs, which resulted in a surplus of 3.5 million kokanee eggs. These surplus eggs were shipped to the Mackay Hatchery and the Lake Chelan Hatchery in Washington.

A section of Wolf Lodge Creek, a tributary to Coeur d'Alene Lake, was blocked with a weir and a "V" trap to capture fall chinook broodstock. Approximately 30 fish entered the trap and approximately 60,000 eggs were collected and sent to the Mullan Hatchery.

Ten wild Kamloops were captured in Spring Creek by seining. These fish were held at Clark Fork until they were ready to spawn. From three females, 16,800 eggs were collected. Due to heavy silt and algae in the incubators, eye-up was only 37%.

A Merwin Trap was installed in Kerr Lake by regional and hatchery personnel in May to capture westslope cutthroat spawners. Only one cutthroat was captured and no eggs were taken. As a result, future broodstock for the hatchery will come from production fish at the hatchery or Fish Lake cutthroat from the McCall Hatchery.

Large numbers of brown trout were delivered to the hatchery for redistribution due to inaccessibility of planting sites and low warmwater. High mortality was experienced due to high water temperatures in the Spokane River. The fish could not be held at Clark Fork for any length of time due to low water flows at the hatchery.

ACKNOWLEDGEMENTS

Hatchery staff for the year included:

Gene McPherson, Fish Hatchery Superintendent II
Bruce Thompson, Fish Hatchery Superintendent I
Doug Ramsey, Fish Culturist
Carol Craig, Laborer
Karl Neumann, Laborer
Phillip Franc, CETA

Table 1. Clark Fork egg production.

Species	Green Eggs		Percent eye-up	Average eggs/ female	Shipped	Kept
Kokanee (late-spawning)	15,020,539	3,746,413	92.7	350	4,915,608 (Mullan) 2,394,608 (Sandpoint) 1,794,777 (Mackay) 1,875,712 (Washington)	4,040,183
Westslope cutthroats:						
King's Lake (4-yr.-old)	659,869	456,646	69.2	757		
Kerr Lake (3-yr.-old)	72,352	43,841	60.6	562		
Wild Kamloops	16,817	6,224	'37	5,606		

Table 2. Fish released from Clark Fork.

Species	Number	Pounds	Location
R1 catchables	92,735	28,604	Lowland lakes, streams
C2 swim-up fry	346,700	103.8	Blacktail, Zero creeks
C2 1-year fry	226,751	688.5	Spring, Hunt creeks
C2 fingerling	348,708	15,682	Priest L., Spring c.
C2 broodstock	840	490	Mirror Lake
R3 broodstock	1,545	2,975	Moyle River
KL fry	3,338,321	2,988.6	Clark Fork R. , Sullivan Springs
K1 fingerling	20,086	1,210	Hayden, Hauser Lakes
BN fingerling	684,202	7,875	Spokane R., Priest R., lowland lakes
CC fingerling	15,272	830	Cocolalla Lake
BA fingerling	2,050	16.25	Hayden Lake
Totals:	5,080,210	61,463.15	

Table 3. Fish shipped to Clark Fork.

Species	Number of fish	Pounds
C2 Fish Lake	58,206	151.5
BN	776,393	8,935
BK	48,240	670
K1	20,086	1,210
R1	107,293	31,463.
Totals:	1,010,218	42,429.5

Table 4. Fish transferred from Clark Fork.

Species	Number of Fish	Destination
C2 fry	8,000	Mullan Hatchery
C2 fry	60,000	Sandpoint Hatchery
BA (commercial)	2,050	Hayden Lake
CC (commercial)	15,272	Cocolalla Lake
Totals:	85,322	

Table 5. Fish on hand on September 30, 1985.

Species	Number of fish	Pounds
C2 fry	137,283	290
C2 fingerling	427,522	5,481
C2 broodstock	23,740	29,990
K2 fry	3,971	9.5
Totals:	592,516	35,770.5

Table 6. Fish feed utilized at Clark Fork.

Type	Pounds	Cost
Rangen dry	100	29.26
Rangen semi-moist	50	26.94
Moore-Clark semi-moist	100	61.00
Moore-Clark	28,600	13,273.63
Totals:	28,850	13,390.83

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