

PERFORMANCE REPORT

STATE: Alaska

GRANT NO.: F-10-33

GRANT TITLE: Sport Fisheries Investigations in Alaska

PERIOD COVERED: July 1, 2017 - June 30, 2018

STUDY NO. AND TITLE: E-3-02 Hatchery Egg Takes and Support

STUDY OBJECTIVES:

The purpose of this project is to collect gametes from wild fish populations to rear in the Ruth Burnett Sport Fish Hatchery (RBSFH) in Fairbanks.

Project objectives for Hatchery Egg Takes project, E-3-2, are to:

1. Arctic grayling - collect and artificially fertilize 155,409 eggs using up to 47 females and 47 males from the Chena River population.
2. Chinook salmon - collect and artificially fertilize 53,538 eggs using up to 10 females and 10 males.
 - i) Visually inspect all Chinook salmon donors for Ichthyophonus.
 - ii) Obtain kidney samples from all female Chinook salmon donors to screen for BKD.
 - iii) Obtain kidney and ovarian samples from Chinook salmon for stock disease history.
3. Coho salmon - collect and artificially fertilize 105,044 eggs using up to 29 females and 29 males from the Delta Clearwater River population.
 - i) obtain kidney samples from all female coho donors to screen for BKD.

RESULTS/DISCUSSION:

Objective 1: Chena River Arctic grayling were captured with electrofishing gear 7, 8, and 10 May 2018. One hundred three males and 123 females were held in net pens until ready for spawning. The egg take occurred 15 May 2018 producing 94,630 fertilized eggs. The number of fertilized eggs collected differs from the 155,409-target listed in the FY18 synopsis because fewer gametes were required to meet updated hatchery production goals. Forty-two females were artificially spawned in groups of approximately 5 fish and fertilized with milt from an equal number of males. Fertilized gametes were sent to Ruth Burnette Sport Fish Hatchery (RBSFH), William Jack Hernandez Sport Fish Hatchery (WJHSFH), and to Michigan State University for incubation and rearing. All live fish not used for donors were released back to the Chena River.

Objective 2: Chena River Chinook salmon were captured with electrofishing gear 17 July 2017. Sixteen males and 15 females were held in net pens until ready for spawning. The egg take occurred 18 July 2017 producing 61,950 fertilized eggs. Nine females were artificially spawned and the eggs from each fish were fertilized with milt from two males. Fertilized gametes from each female were kept separate from others for family tracking. All eggs were sent to RBSFH for incubation and rearing. All live fish not used for donors were released back to the Chena River. This objective was achieved.

- i) All Chinook salmon donors were visually inspected for *Ichthyophonus*. No visual signs of *Ichthyophonus* were observed. This objective was achieved.
- ii & iii) Kidney samples were collected from all female Chinook salmon egg donors. Ovarian fluid samples were collected from all female Chinook salmon egg donors. Biological samples were submitted to ADF&G Fish Pathology in Anchorage for disease screening and all eggs were deemed suitable for incubation. This objective was achieved.

Objective 3: Delta Clearwater River coho salmon were captured with a beach seine 9-10 October 2017. Forty-two female and 45 male coho were held in net pens until ready for spawning. Twenty-eight pairs (2:2) were artificially spawned 11 October 2017 producing 95,218 fertilized eggs. Fertilized gametes were kept separate from others for family tracking in two pair sets (two males and two females). All eggs were sent to RBSFH for incubation and rearing. The remaining eggs needed to meet our objective were obtained from four male and four female coho salmon that were transported to Fairbanks and spawned for the Fairbanks School Salmon Program 11 October 2017. All remaining fish not used for donors were released live back to the Delta Clearwater River. This objective was achieved.

- i) Kidney samples were collected from all female coho salmon egg donors. Biological samples were submitted to ADF&G Fish Pathology in Anchorage for disease screening and all eggs were deemed suitable for incubation. This objective was achieved.

FINAL REPORT STATUS:

This performance report is the final report for these objectives. Statistics collected during egg takes (such as number of males and females captured, number spawned, and fecundity) are also archived in regional files.

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DATE: September 1, 2018