

THE MCLOUGHLIN RIVER CHUM ASSESSMENT PROJECT – NF-2012-I-21 YEAR ONE FINAL REPORT

PROJECT OBJECTIVE YEAR ONE: To finclip mark a minimum of 150k McLoughlin Creek 2011 brood juvenile chum salmon from enhanced production at McLoughlin Creek CEDP Hatchery.

RESULTS

The objective was achieved. During the period April 16 through May 2, 2012 a total of 165,093 2011 brood juvenile chum from the McLoughlin Creek Hatchery were marked by finclip removal of the adipose fin. Live inventory of marked chum transferred to the netpens for final rearing in McLoughlin Bay was 161,727 and there were 161,662 healthy smolts released on the 18 of May 2012. Survival from marking to release was 98%. Adult returns from the 2011 brood would be expected between 2014 (age 3) and 2016 (age 5) with most returning at age 4 in 2015.

METHODOLOGY

Finclip marking is done by removal of the adipose fin using microsurgical iris scissors. Fry are processed through a marking table specially designed and outfitted for this purpose. Small net loads of unmarked fry are anesthetized and then placed in net “baskets”. The docile fry are then picked up, and with the aid of a magnifying light the scissor blades are placed in line with the back of the fish snug up against the adipose fin and closed. Marked fry are placed in a short term recovery net by the marker and moved to larger recovery bucket as this net fills. A hand tally counter is set up by each basket so crew can record each fish that is clipped. Marked fish are checked for clip quality on a regular basis and mortalities at the table or in the rearing trough are recorded. DFO Community Advisor, S. MacLaurin was on site April 16th and 17th to set-up the table and work with crew to refresh skills.



Marking table and crew for 2011 BY McLoughlin Chum

ADDITIONAL BACKGROUND

The marked chum are part of a 2,075,243 total release of the 2011 brood. Culture of this brood started with eggtakes in McLoughlin Creek in between September 17th and 29th, 2011. Primary incubation (to eyed stage) was done in Atkins bulk incubators and secondary incubation occurred in Kitoi style bulk incubators (these installed with PSC northern funds in 2008 NF-2008-E-4) and Keeper Box style incubators. At the swim-up stage fry were ponded to Capilano rearing troughs at the hatchery and held for a few days to initiate feed. Once feeding began, all but ~200,000 fry were transferred to salt water netpens for final rearing. The fry kept at the hatchery were used to accomplish the marking project and were then transferred to the netpens for final rearing. Rearing in the netpens continued for all fry until a 1.0 gram average weight was attained.

During broodstock collection and carcass deadpitch of the 2011 brood, 100 scale samples were collected and processed to generate a profile of age class composition. The scale sampling program will continue through the length of the project with costs being absorbed by the CEDP contract and DFO. Age composition in adult returns is needed to allow for determining contribution by brood year when the same mark is used each year. A summary of the results for 2011 is shown below.

| MCMCLOUGHLIN 2011 CHUM - AGE SUMMARY BY SEX | | | | | |
|---|--------|-------|------|-------|----------------|
| SEX/AGE | AGE 4 | AGE 5 | UNK | TOTAL | |
| MALE | 44 | 6 | 0 | 50 | samples |
| %BY SEX | 88.0% | 12.0% | 0.0% | | 50 ages |
| FEMALE | 49 | 0 | 1 | 50 | samples |
| %BY SEX | 100.0% | 0.0% | | | 49 ages |
| TOTAL | 93 | 6 | 1 | 100 | |
| %TOTAL | 93.9% | 6.1% | | 99 | 99 ages |

RECOMMENDATIONS

Given that this was the first year of marking at McLoughlin Hatchery in many years the program went very well. There are really only three recommendations that the crew and extended team have put forward that would improve the project and will be easy to implement.

1. a portion of fry from all incubators will be set aside at the hatchery and marked in groups to get broad representation from the brood year
2. during marking the troughs will be set up so only the fish that will be processed for marking in a day will be starved (so the whole trough is not starved for several days during marking)
3. during marking - use of two or three small nets in the anesthetic bath (instead of one net with large number of fish) to prevent any mortality from too long an exposure to the anesthetic

PROJECT COSTS

The total cost of the project was \$7,542.90 which was within \$27.10 of the \$7,570.00 allowed in the contract. A majority of the expenditure for the project was for labour at \$7,872.50. Supplies accounted for the remainder of the expenditures at \$360.40. The travel for the DFO technical lead was covered by DFO, freeing up funds for additional labour and supplies that were needed.

| <u>Category</u> | <u>Expenditure</u> | <u>Budget</u> | <u>Difference</u> |
|-----------------|--------------------|----------------|-------------------|
| Labour | \$7,182.50 | \$6,720 | +\$462.50 |
| Site Costs | \$ 360.40 | \$ 850 | -\$489.60 |
| TOTAL | \$7,542.90 | \$7,570 | -\$ 27.10 |

ACKNOWLEDGEMENT

The McLoughlin Creek Hatchery and DFO project team would like to thank the PSC northern fund for support of this project. There is great interest in updating survival and contribution to fisheries from this community project where much of the benefits are felt locally and where the PSC has funded upgrades to increase chum production.