MCLOUGHLIN 1 MILLION CHUM EXPANSION, PSC PROJECT NF-2008-E-4 FINAL REPORT – JUNE 30, 2009

This final report will add to previous updates with complete production summary data and a summary of expenditures for the McLoughlin Chum 1 million expansion project.

Production Summary

STAGE	NUMBER	%SURV	BIO-STANDARD
EGGS TAKEN	1,061,590		
LIVE @ EYED	1,002,851	94.47%	
PONDED	958,285	95.56%	
RELEASED	949,660	99.10%	
EGG TO RELEASE		89.46%	72%
SIZE @ RELEASE	1.0gms		1.0gms

Report by Component

The project had three components:

1. Facility upgrade
2. Eggtake and incubation of additional 1 million chum
3. Rearing and release of additional 1 million chum

Facility Upgrades

The facility upgrades that were completed were:

- Addition of primary incubation capacity in incubation room which required changes to plumbing in main incubation header, layout of Heath Stacks and addition of two Atkins type bulk incubators. See Photo 1
- Removal of old fiberglass "keeper boxes" and installation of Kitoi style boxes for secondary incubation. This required quite a bit of labour - moving 4 rearing troughs, removing old incubators, constructing a platform for the Kitois and plumbing modifications to header and outlet trough. See Photos 2-3
- Construction of new netpen float and upgrade of anchor system for final rearing to release. See Photo 4

Eggtake and Incubation

The 2008 McLoughlin broodstock program was successful in capturing and spawning an additional 402 females and 405 males for a total eggtake of 1,061,590 (Table I). Eggs were taken between Sept 23 and Sept 26, 2009 and primary incubation occurred in the "new" Atkins cells. Each of the two Atkins units has six openings and 10 of the 12 openings were filled with approximately 100k eggs each (see Photos 5-9). Eggs remained in these primary incubators to the eyed stage (late October), when they were shocked and picked and inventoried – then transferred out to the Kitoi boxes and Heath Stack incubators filled with plastic substrate. The live inventory at eyed was 1,002,851 for a survival to eyed of 94.5%. Live eyed eggs were distributed to the new Kitio boxes and Heath tray incubators. Each of the five new Kitoi boxes was filled with ~200k eyed eggs and 18 Heath trays were loaded at approximately 7.1k eggs per tray. In January the eggs reached the hatch stage and the crew monitored and cleaned screens of eggs shells in the Kitoi boxes. Ponding from the Kitoi boxes and Heath Trays began in mid February 2009 and continued to April 7th. A total of 958,285 fry were successfully ponded. Survival to ponding was 90.27%, less than expected due to a fish culture error where too many fry were manually ponded before they were at the right swim-up stage, resulting in some mortality.

Rearing and Release

Swim-up fry (rearing ready) were allowed to self-pond (migrate out of the incubators) through pipes that join the incubator to a rearing container (Capilano Trough). They were also ponded by lifting the mesh bag lining the incubator and transferring that to a trough. Feeding was initiated immediately after ponding and once several troughs were filled, fry were transferred to a netpen in McLoughlin Bay or kept on site for final rearing and release (see Photo 10). Fry were moved to the netpens during the period March 3rd to April 1, 2009 and rearing continued at both sites to May 8-11, 2009 when all groups were released. As reported in the Production Summary, a total of 949,660 additional chum smolts of 1.0 gm average size were released into McLoughlin Creek and Bay for a total overall survival of 89.46%. The size and survival to release both meet or exceed the target and bio-standards.

BUDGET UPDATE

Table I gives an outline of expenditures to date. All of the $45,119 budget has been spent. The $10.07 above the allocation will come from the DFO, Community Advisor budget. Expenditures have varied from original budget in that we were able to obtain used incubators instead of purchasing new ones but had to supply the technician for installation. The technician was a Heiltsuk community member so this was an added benefit of the project.

TABLE I

MCLOUGHLIN CHUM EXPANSION BUDGET TRACKING		
ALLOTMENT =	$ 45,119.00	June 30/09
TECHNICAL SUPPORT	$ 7,275.60	actual
EGGTAKE/PICK LABOUR	$ 3,765.63	actual
KITIO BOX SHIPPING	$ 585.02	actual
PLUMBING	$ 1,590.40	actual
FABRICATION	$ 240.00	actual
REARING NETS + freight	$ 3,834.64	actual
LIMESTONE & FREIGHT	$ 801.74	actual
FISH FOOD & FREIGHT	$ 4,039.63	actual
SUBTOTAL	$ 22,132.66	
NETPEN (budget $19292 + $5k = $24292)		
LOGS	$ 6,300.00	actual
WIRE + FREIGHT	$ 1,433.78	actual
HARDWARE	$ 975.90	actual
CHAIN	$ 336.05	actual
BREAKER ANVIL	$ 30.42	actual
AUGER BITS	$ 260.50	actual
TIMBERS, DECKING ETC	$ 7,800.00	actual
ASSEMBLY	$ 2,200.00	actual
READY MIX CONCRETE	$ 194.88	actual
CHAIN AND SHACKLES	$ 1,118.88	actual
VESSEL RENTAL	$ 750.00	actual
LABOUR FOR FINAL INSTAL AND ANCHORING	$ 1,596.00	actual
NETPEN TOTAL & BAL	$ 22,996.41	$ 1,295.59
COMBINED	$ 45,129.07	-$ 10.07

Photo 1- Atkins Cells install for primary incubation

Photo 2- Old Keeper Boxes to remove

Photo 3 – Kitoi boxes replace Keeper for secondary incubation

Photo 4- New Netpen Float in McLoughlin Bay

Photo 5-Broodstock Capture

Photo 6-Females on bleeding rack

Photo 7- Stripping eggs from ripe female

Photo 8- Planting fertilized eggs in Atkins Cell

Photo 9 – Crew celebrate meeting egg target

Photo 8- Final rearing at netpens in McLoughlin Bay