



Boneyard Fisheries Habitat Overview and Classification

Metlakatla Fisheries Program staff conducted an aerial overview of fisheries foreshore and intertidal habitat at the "Boneyard", a shallow bay within the Skeena River Estuary. The Boneyard is a bay containing shallow waters with mobile mud and sand flat substrate, providing excellent foraging habitat for seabirds, waterfowl, and various fish species. This bay is known to provide valuable fisheries and wildlife habitat, and is also adjacent to the CN railway access for Prince Rupert.

As the Port of Prince Rupert is planning expanded volumes and service via the railway to the various Port facilities, inventories of habitat located within the influence of the railway must be conducted in order to establish baseline values for protection within any future development planning processes.

The purpose of the project was to attempt to view and classify the available fisheries nursery and feeding habitat in the area and particularly to determine

whether Eelgrass, *Zostera japonica* or *Zostera typica* were present in this area.

MFP staff surveyed the area by helicopter and with video and still photography collected aerial photos and footage of the foreshore and intertidal habitat during very low tide. GPS was used to confirm the locations of images taken. It was determined that eelgrass was not present within the



Boneyard area, however, many other species of salt tolerant grasses and shrubs were found to be present in the area, and the fisheries habitat value will still be considered high, meaning that a high priority should be placed on protecting this area from potential spills of hazardous materials (from the railway or marine traffic sources), and from the impacts of port or other resource development projects.

Catch Monitoring



During this July to August period Metlakatla Governing Council approved a working budget for this year's catch monitoring program that consisted mostly of salmon and halibut. Metlakatla Fisheries Program worked collaboratively with Ecotrust to complete our salmon and halibut catch monitoring program. The total FSC estimate of

sockeye harvested by FN within June 30th to August 19 was 9091 pieces and the total amount of Halibut harvested was 9823 pounds, there was still quota that was not harvested. All estimated FSC was harvested by FN within Sub-Areas 4-9, 4-12 & 4-15.



Silver Creek

Stream Walks

Metlakatla Fisheries Technicians Megan Mitchell and Tricia Leighton along with Fisheries and Oceans' Stephen Leask have been conducting Metlakatla Fisheries 2011 adult salmon enumeration program in Silver and Mc.Nichol Creek. The enumeration program runs from September to November with stream inspections being conducted every 10-12 days counting coho and pink salmon. The enumeration program is intended to count returning adults, determine run timing and create baseline biological

data for potential restoration or enhancement opportunities.

Our escapement to date for Mc.Nichol Creek is 2 Coho and 170 pinks and our escapement for Silver Creek is 6 Coho and 1,600 Pinks for our 2011 stream walks this year.

Historically, Silver Creek had a vibrant chum population but extensive logging in the watershed lead to the species becoming extirpated. Habitat restoration efforts conducted within the last 15 years have created favorable salmon habitat increasing suitable water quality, spawning habitat

and the overall carrying capacity of the creek. Fisheries and Oceans' Brian Spilsted, Rob Dams and Stephen Leask in partnership with Metlakatla Fisheries Program and the Oldfield Creek Fish Hatchery have been working on a recovery plan to reintroduce chum salmon into Silver Creek. Chum populations in Lachmach Creek and Toon River were identified as being biologically similar to the extirpated Silver Creek chum population and a transplant permit was approved to use either Lachmach Creek or the Toon River as donor stock.



Mc.Nichol Creek



Training

Fisheries Technicians Megan Mitchell and Tricia Leighton traveled to Terrace on Monday September 19th and participated in Swift water Rescue Technician training from Tuesday 20th until Thursday the 22nd. Megan was re-certifying her SRT and Tricia participating for the first time.

On the job training is provided daily through vessel operation and navigation, catch monitoring and Stream walks. Megan and Tricia will both be obtaining their

Med-A3 in October as well as other upcoming marine courses this will help us fulfill our projects and AFS agreements.



Big Falls Project

Metlakatla Fisheries has continued to partner with Cambria Gordon on the Big Falls Project. This year William Beynon and Tricia Leighton have only made two trips into big falls due to unfavorable weather conditions. On the two occasions William has snorkeled in the Falls River looking for Steelhead and Chinook Reds while Tricia stood on shore with a throw bag to ensure proper safety.



Habitat Assessment at Lambert Island

On September 15th William Beynon, Megan Mitchell, and Tricia Leighton traveled to Lambert Island, a shallow bay of mobile sand banks and sand/mud substrate within the Skeena River Estuary known to contain Eelgrass; to photograph and assess the presence of Eelgrass and start the

mapping process of the area. This information will assist in attempting to document and delineate the boundaries of the eelgrass beds identified previously.



Skeena Estuary Juvenile Eulachon and Longfin Smelt Study

Most people know eulachon spawn in the fresh water where we catch them in the spring. What happens to the larvae after they hatch is not known very well at all. Eulachon larvae are so abundant they are certainly an important part of the coastal ecosystem, but many questions about them are unstudied. Eulachon larvae are 5 or 6mm when they hatch and as a result are not able to swim strongly. However, the estuary, or the area between Kwinitza and out to beyond Smith and Kennedy Islands, is a complicated area with varying ranges of salinity, many potential predators and prey, and reversing flows that provide the potential for them to remain for some time and to grow.

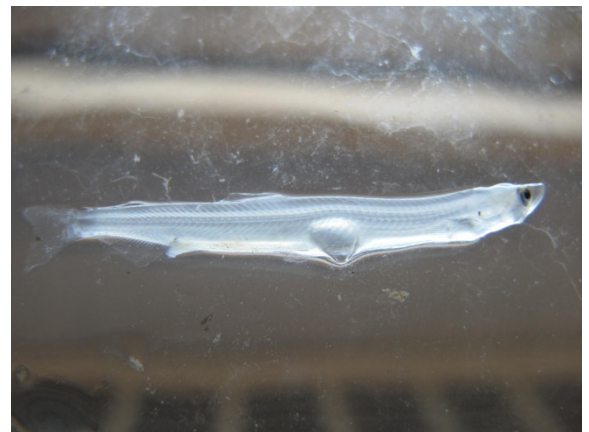
In 2010 MFP studied the Skeena estuary and looked at distribution, abundance, and growth of eulachon. While studying eulachon larvae we caught many larvae up to 40mm (approximately 1.5inches) and thought we had found great new information about the early life of eulachon. Samples were sent to DFO in Nanaimo to confirm our ID. Eventually we realized the small plankton net we were using was not catching larvae so we made a bigger net and immediately caught larger fish. Near Tyee Test Fishery we caught larger larvae together with a new species for the Skeena, Longfin smelt. A close relative of eulachon, these smelts are another part of the estuary ecology, and we made the first record of them in spawning in B.C.

Although Longfins live from Alaska to California, and it is not a surprise they are in the Skeena, still this was a very important discovery. Larvae caught with the adult Longfin were indistinguishable from what we thought were eulachon, so we also realized that it is very difficult to tell these larvae apart, a problem shared by DFO and other researchers.

In 2011 MFP continued sampling in the estuary to catch samples we can use to genetically separate eulachon from Longfin smelt. Like anyone knows that watches crime shows, genetic analysis can separate species.

We sampled larval fish in the Skeena estuary and are having them analyzed to tell us which are eulachon and which are Longfin. If some are in fact eulachon it will tell us there is a period when they reside in the estuary, something not known at present. If these larvae are all Longfin that will tell us there is a very abundant species in the estuary that also must be an important part of the ecosystem and that prior to Metlakatla's work was completely unknown in the Skeena. Several labs are doing this analysis for us and results are expected in the next few months.

A final note is that at one point Longfin smelt were the most abundant fish in San Francisco Bay in California. The main site of their spawning there was the Sacramento River. So much water was withdrawn from that river for irrigation that the productive zone of salinity required by them was reduced and they are now up for listing as an endangered species in the US. A key forage fish has almost disappeared greatly damaging the productivity and fish abundance of SF Bay. Samples from our work in the Skeena are being sent to California for genetic analysis to help them with their studies.



Larvae approximately 40 mm (1.5 inches). Oil Globule shown in center of Eulachon.