



Meeting Notes

Subject	Fisheries Studies Update	Sheet	1	of	6
Project Number					
Meeting Date	July 11, 2005	Meeting Location	HDR 4 th Floor Conference Room		
Notes by	Ryan Holtan, Robin Reich	Office	HDR		
Attendees:	Barb Mahoney NOAA Fisheries	Brad Smith National NOAA Fisheries	Mark Somerville, DNR OHMP		
Larry Peltz, NOAA Fisheries	Mark Lamoreaux, Eklutna Tribe	Edrie Vinson Federal Highway Administration (FHWA)	Jon Houghton Pentec Environmental		
Jim Starkes Pentec Environmental	Dale Funk, LGL	Michael Link, LGL	Tim Markowitz, LGL		
Kevin Doyle HDR	Ryan Holtan HDR	Robin Reich HDR			
Topics Discussed	Knik Arm Crossing Fisheries and Beluga Whale Studies				

Robin Reich (HDR) Welcome

Introductions around the room

Robin Reich (HDR) Project Overview

This meeting was called to update everyone on the progress of the two studies conducted by Pentec Environmental and LGL. As both studies are coming to a close we thought it wise to get an update on what has been happening out in the Arm.

Jon Houghton (Pentec)

(referencing a Powerpoint presentation)

Our methods this year (2005) have included using a 120ft beach seine, a 30ft beach seine, a tow net, and the same tow net from a fixed position at Port MacKenzie. The 120ft beach seine was



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conducted from April through June 2005. Each station sampled was done so at varying tides and times. In April, we had eight stations along the Arm and we found saffron cod, a few hooligan, very few juvenile salmonids, generally coho or sockeye, but the sample was dominated by three spine stickleback. In May, we had nine stations along the Arm and found a lot of saffron cod and more juvenile salmonids than in April. These juveniles were mostly hatchery fish and consisted of pinks, chum, and larger Chinooks. In June, we sampled 10 stations and found that the juvenile salmonids were still very abundant. We found coho, sockeye, chum, and Chinook to be dominant among others in the sample.

For the benthic tow net sampling, we chose five transects in the middle of the Arm (about 80-100ft depth). In May, we caught a lot of benthic invertebrates. Chum and pink salmon were more abundant, but all five salmon species were still present. In June, sockeye were more abundant, but with all five species still present. We also caught larval flat fish that we have not keyed out.

For sampling at Port MacKenzie, we used a large tow net hung in the water from a fixed position along three stations on the Port MacKenzie dock structure. Samples were taken at both ebb and flood tide on both sides of the dock structure. The end result of the facilities sampling was intended to be a relative gauge of how the juvenile salmon migrate when encountering large man-made structures that drastically alter the shoreline. In conjunction with the facilities sampling, a small beach seine was used to gauge the relative effects of the Port MacKenzie dock structure. We conducted small beach seines at three stations north of Port Mackenzie and three stations south of Port Mackenzie. In the beach areas, small coho and sockeye were abundant. They had not been in the Arm long. As we wrap up the July studies, we'll have more data for both the tow net sampling and the Port MacKenzie sampling. However, it will be difficult to compare results between the dock and the beach because of different sampling techniques.

Barb Mahoney, NOAA Fisheries

Was there a difference in species abundance in the mid channel and along the shore?

Jon Houghton, Pentec

The species mix is about the same. However, it is difficult to compare abundance numbers because beach seining and tow netting are not comparable methods. We'll look at the relative proportion of fish. We're seeing a lot of invertebrates including mycids and zooplankton.

Larry Peltz, NOAA Fisheries

It looks like there might be a fair amount of food in the mid channel.

Brad Smith, NOAA Fisheries

Where are the hooligan coming from or going to?



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Jon Houghton, Pentec

We caught hooligan all the way up to Eagle Bay, but we didn't sample farther up the Arm.

Tim Markowitz, LGL

(referencing a powerpoint presentation)

As you know we've been conducting the beluga whale survey along the Knik Arm since August of 2004 and we've put out a massive effort since the onset of this project. We have about 10,000 hours of shore observation data from 20 trained field biologists rotating through the shore observation stations. At each shore observation location, a trained observer would scan and count any whales spotted at a set time interval and record the number and group composition as well as the location along a grid. This way a particular group could be tracked as it moved up or down the Arm. Cairn Point has had the most amount of observer effort.

In June and July of 2005 (and in some ice free months of 2004), we conducted boat surveys along the Knik Arm and in the Susitna Flats. A team would follow a set path up the Arm predetermined by GPS waypoints to maintain the consistency of the study, if a group was spotted, the boat would divert from its course and approach the whales so the team could obtain a count and GPS location of the group as well as a description of those whales in the group. The boat surveys were conducted over 4 days for a total of 21 hours of observation with 284 miles surveyed.

Barb Mahoney, NOAA Fisheries

When were boat surveys completed?

Tim Markowitz, LGL

Surveys were conducted mainly at high tide because it is difficult to access many locations during a low tide.

Brad Smith, NOAA Fisheries

How did you work the west side (Susitna Flats) data into the study?

Tim Markowitz, LGL

The purpose of doing the work on the west side was confirm or determine where the whales were if they were not in Knik Arm. It was to help be more confident about the whales not being in Knik Arm. Also, the work helped figure out movement when it did occur.

Michael Link, LGL

Susitna work helps to lessen the chance of a false positive. It helped to determine that we were definitely not seeing the whales in Knik Arm.

Brad Smith, NOAA Fisheries



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We are interested in the beluga photos and identifying individuals.

Tim Markowitz, LGL

We do have photos that capture certain individuals.

Brad Smith, NOAA Fisheries

How do you confirm a negative sighting? Could it be that you just can't see the whales from the shore observation points?

Tim Markowitz, LGL

While there are problems with the shore observation study like viewing consistency especially in the winter, the numbers are still on the conservative side and reflect that. What we are considering is the use of non-Knik Arm surveys of beluga whales to confirm our negative sightings. If the whales are found outside the Arm then we know we're not getting a false negative. Western sites along the Cook Inlet where whales are being surveyed can be used in conjunction with our study to paint a more accurate picture of where these whales are.

Tim Markowitz, LGL

The number of sightings varies by season and within the season. We found the most sightings occurred in September, followed by August and then October, July, and June. Within a day, the movements and concentration of whales follows a very regular pattern relative to the tidal movement. When they are in the Arm, at low tide, the greatest number of sightings occurs at Cairn Point near the mouth of the Arm, while at high tide the greater number of sightings occur near Eklutna. This becomes very important when considering construction times for a pile supported bridge or crossing. At low high tide, less than 5% of sightings occurred at Cairn Point, making both the spot and time an ideal choice for construction to minimize acoustic harassment.

As we finish up this study at the end of August, the 2004 report will be superseded by the new 2005 report.

Brad Smith, NOAA Fisheries

Do you have average group size information?

Tim Markowitz, LGL

As you move up the Arm you find a greater proportion of younger whales with the average group size around half a dozen but sightings were made of groups of 15 to 20 whales. A heavier concentration of the belugas was also found during the bigger fish runs in the Knik Arm.

Brad Smith, NOAA Fisheries

Are there times when fewer total whales are in the Arm?



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Tim Markowitz, LGL

Yes, in September there were quite a few. In the rest of the year, there were very few-an occasional visit by a few.

Michael Link, LGL

We will be doing some work for the Port of Anchorage. We are working with the Port to determine level of effort for monitoring.

Brad Smith, NOAA Fisheries

What is the southern extent of sightings when the whales are in the Arm? Could this have to do with the water available?

Michael Link, LGL

The bulk of the whales stay up in the Arm in September. Very few individuals moved completely out of the Arm during that time. In the spring, there were much fewer individuals. It could depend on the food available.

Jon Houghton, Pentec

Adult salmon peak in July and August. Saffron cod are around to some extent during other times.

Brad Smith, NOAA Fisheries

They may be eating dead, spawned out salmon too.

Brad Smith, NOAA Fisheries

Did you take physical water measurement?

Jon Houghton, Pentec

We took turbidity. It was about 2-8 cm using a secchi disk. Salinity measurements showed that the arm is relatively well mixed.

Michael Link, LGL

We took visual observations of sea state, wind, and sea ice conditions.

Barb Mahoney, NOAA Fisheries

Is it possible to compare boat and shoreline observation numbers?

Tim Markowitz, LGL

It is possible to compare them and to confirm sightings. We are seeing that our shore based observations are pretty close to our boat measurements.



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Tim Markowitz, LGL

We need to confirm the notion that there is a higher proportion of younger whales.

Mark Lamoreaux, Eklutna Tribe

When the whales go past the Eklutna where are they going? It is likely they are going up to the Knik Bridge?

Jon Houghton, Pentec

Did you see any groundings?

Tim Markowitz, LGL

No. We did see one dead whale that washed up.

Michael Link, LGL

At high tide, we saw fewer individual whales in the proposed project area. This would be important to any pile driving efforts associated with the project.

Barbara Mahoney, NOAA Fisheries

Are the hydroacoustic measurements still occurring?

Michael Link, LGL

It was only done during pile driving at Port MacKenzie in August 2004.

Mark Lamoreaux, Eklutna Tribe

Do you have a sense of what proportion of the total population you were seeing in Knik Arm?

Tim Markowitz, LGL

At some points during the year, mainly September, it may be relatively high. But most other times of the year it is low.

Mark Lamoreaux, Eklutna Tribe

What is relatively high?

Tim Markowitz, LGL

Based on the raw count it is a couple of hundred. However, that is an uncorrected number. It is probably around 100 whales.

Michael Link, LGL



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The goal of this project wasn't to estimate daily abundance. It was to show whether there was use of the project area by beluga. We'll show mostly raw data in the report. We will probably not get at the total number of whales.

Robin Reich (HDR)

Will this make the 2004 study inaccurate or unusable?