

**Marine Technical Working Group
Draft Minutes for December 19, 2007**

Minutes recorded by Charlotte MacCay/Bristol Environmental

Present:

Phil Brna (USFWS)
Mark Fink (ADF&G)
Jon Houghton (Pentec)
Ted Otis (ADF&G - phone)
Ken Goldman (ADF&G - phone)
Charlotte MacCay (Bristol)

As with all Technical Working Group (TWG) Meetings, the minutes reflect discussion of suggestions and concerns raised by individuals. Discussion does not reflect any decision making or consensus from the group (with the exception of electing a lead).

Election of a lead was discussed. A co-lead of Ted Otis and Ken Goldman was proposed, but the final decision is still under discussion.

It was strongly suggested that study data are needed in order for the TWG to function effectively. Data will help provide information on how the studies are proceeding. Non-release of data could potentially delay the permitting process. The Pebble Limited Partnership (PLP) reported that it is conducting quality assurance reviews of the data at this time and wished that process to be completed before discussing it.

The Group agreed that TWGs differ from the agency review meetings and the submission of agency comments on study plans in the following ways. They provide for:

- More in-depth review
- Direct contact with the consultants
- Opportunity for agencies to discuss contradictory comments that have been submitted to the project

A review of the objectives of the PLP Marine Study Program was provided:

- Build on the limited knowledge available at or near potentially affected locations
- Establish baseline for future monitoring program
- Document the food web
- Investigate areas used for herring spawning

Information Needed:

- If project development plans include any water discharges, then that will affect what studies need to be done.
- If the project includes dredging, that will also affect what studies need to be done.
- Attempt to obtain scallop data from ADEC. ADF&G may also have some samples to provide.

- ADF&G would like a list of contaminants being reviewed to be included in the study plans.
- Future discussions should include details of trawl sites and drop spots for pots to determine if more tanner can be sampled.
- A chart of depths for vessel access
- Definitive information on vessel draft.
- Invite the Marine Pilots Association to discuss such topics as necessary traffic corridor width.
- Side-scan data for Port Site 1.
- What direction tows are made during their offshore otter trawling activities, relative to tidal currents at the time of the tow.

Information Gaps

- Acoustic work was done for a Cook Inlet coal project – the paper about the work will be reviewed regarding any relevance for this type of work to this project

PLP Studies Overview:

- 2004 – a one time reconnaissance trip was conducted to acquaint the PLP with the general conditions. Studies included: trawling, seining, intertidal surveys, diving, sediment sampling, water sampling, and tissue sampling.
- 2005 – The PLP planned to conduct surveys monthly from April – August and September if weather permitted. April and September sampling were not conducted due to weather.
- 2006 – The PLP conducted April, May, and September sampling to make up for studies missed in 2005.
- 2007 – The PLP deferred most studies as a port location was undetermined, fish sampling (trawls and beach seines) were conducted in September and October.
- 2008 Pentec Proposed Plan for Studies: 1/month April through October.

PLP Trace Element Sampling Discussion

- The objective is to document existing trace elements, and other potential contaminants in fish and animal tissues to have for reference in case of an incident or the permitting of any major discharges.
- Plans include using the same suite of parameters and protocols as other PLP studies doing trace element analyses, except there is no whole body analysis conducted on large fish like halibut and adult salmon.
- Species sampled include mussels, salmon, Dolly Varden, and halibut due to potential human consumption. Future studies will include rock weed in response to previous agency comments requesting baseline data for plants. Some species like salmon and halibut do not spend much time in this area and may not be the most effective indicator species, but they are sampled anyway to address potential public concerns.
- Scallop and Tanner Crab: Scallops and tanner crab are consumed by humans and are long lived – they could be considered for an additional sampled species.

- Tanner crab fishery may reopen in the area, thereby making tanner crab also a species for human consumption concerns. So far, there has been minimal catch of tanners, mostly just juveniles and sub-adults. The population primarily inhabits areas closer to Augustine, but it is thought to be the same population that moves between the areas.
- There may be some scallop data at ADEC. ADF&G may have some samples to provide. Considerations for sampling could include sampling adjacent areas along prevailing currents from the project. This could provide background body concentrations to compare against any potential future releases (bilge water, hydrocarbons, etc)
- Scallops are in Kamishak Bay, but not captured in the study area to date.
- Long life bivalves can be good indicator species. Cockles are one suggestion. Presently, PLP studies are conducted on mussels and *Macoma*- both are widely used for monitoring contaminant levels. There is abundant literature on mussel studies available.
- Species used for tissue sampling within the mid-high range of the trophic level help provide data on biomagnifications.
- ADF&G would like a list of contaminants being reviewed to be included in the study plans.
- Future discussions should include details of trawl sites and drop spots for pots to determine if more tanner can be sampled.
- No rockfish caught yet.
- Consider focusing on species that eiders and otters may be eating – shrimp?
- Consider having studies address food chain and body burden issues.
- Consider addressing adjacent areas to the port site. Studies do address adjacent areas as the studies cover both Iniskin and Iliamna Bays where there are potential port sites. Only one site will be used, making the other bay a comparative study area. Many of the other bays in the area have more boulders on the subsurface and are not comparable habitats to the potential port areas.
- Additional adjacent study areas are of increased concern if a water discharge is included in a port proposal.
- Groundfish studies include yellowfin sole in part because they are in the area for extended periods. Starry flounder are present, they are more shoreline oriented.
- ADF&G may consider compiling a list of species they would like to have considered for sampling.

Importance of the Port

- The road corridor and port are as important a component of the potential project as the mine itself.
- The port is a necessity of the project.
- The State is not planning on building the port at this time. The current assumption is that it will be a private port

Vessel Route Concerns

- Will there be adequate depth at the various port alternatives? It was noted that access routes are lengthy and pass over considerable distances with shallow areas.

Tides may limit access regardless of which site is used. It would be helpful to see a chart of depths for vessel access and to get definitive information on vessel draft.

- Navigational concerns in the area include Iniskin Reef, Black Reef, Iniskin Shoals, ice, and strong winds,
- Traffic corridors will be fairly obvious when looking at the depths for this area. The area is pretty constrained and generally shallower than –40 feet MLLW.
- The Marine Pilots Association should be invited to discuss such topics as necessary traffic corridor width.
- NOAA charts give more detail than some other navigational charts.
- Until a project is proposed by the proponent, there is no clear understanding if dredging for vessel access and/or docking will be necessary. Further information is requested from the Pebble Partnership concerning dredging potential associated with a PLP port.
- Dredging could have direct relevance to the scope of studies. There is interest in addressing both dredge areas and spoil areas in the study plans.
- There is interest in conducting more work in the offshore area.
- There could be a relationship of vessel traffic to herring pre-spawning staging activity. Prior to herring spawning on shallow kelp and shorelines, they take shelter behind headlands where vessels may travel.
- There was also discussion regarding whether salmon might display avoidance behavior related to vessel traffic.
- There is some concern that ships will pass very close to the bottom increasing the risk of spills and bottom-scour.
- It was noted that the EIA process does not usually include studies on the effects of shipping traffic on bottom fish.

Additional Sampling Discussion

- Video sampling would be limited by poor visibility in the bays, farther offshore it may be more reasonable to do.
- High resolution mapping for the area of the deepwater port exists as part of scoping for previous marine projects in the area. There may be some current studies available.
- It was uncertain if side scan/detailed bathymetry was done.
- ROV mapping through access corridor to define habitats for further studies in the event of dredging and or low clearance could be done in concert with trawling for verification of actual animals. This work could also be considered for adjacent areas.
- The boat used so far has been a 60 foot “sleeping platform” with actual work being conducted off of associated skiffs. Work out in the vessel route area, would require a bigger vessel. Vessel options: Can the *Pandalus* be chartered? – ADF&G will investigate.
- Gear limitations may restrain sampling. Habitat is not uniform throughout the area.

- The studies to date have been representative of the majority of shoreline, with the exception of rocky headlands and the rock intertidal/subtidal area offshore of the headlands, steep areas, and reefs.
- Upper intertidal boulder flats are transitional, may not be necessary to sample as they are surrounded by the same mudflats at low tide. Fish could be sampled leaving at low tide if it was thought it would add meaningful data.
- Sampling possibilities along rocky headlands –
 - Divers – visual samplings, a little was done in the 04 reconnaissance.
 - Other alternatives involve killing fish with gill or trawl nets, not easy to do due to swells. Sampling would have to be selective. Nets could fill with salmon and herring. This would upset local fishermen. We already know those species are there. Lethal methods are not a first choice. These nets if used could also kill marine birds and mammals.
 - Sonar – noisy air entrainment so not validated.
 - ROV – deploying an ROV in rocky habitat could damage the equipment. Sampling would have to be conducted opportunistically when bottom habitat offshore of rocky headlands was suitable
- Quantify proportions of habitats within the area.
- Reef habitat is very important to herring to hold up in while they wait to go in on a tide.
- A sampling goal could be what fish are present – what species have not been found in sampling to date e.g., Rockfish?
- Beach seines were towed with the tide to standardize area fished.
- Could deploy cameras with the trawl foot rope to show what species are evading the net. However, visibility is low and may preclude this method at the site. If used, may be able to get center of net only, no vision out to the wings.
- Trawls are primarily based on time with GPS fixes at the beginning and end – time introduces some variability on distance being covered.
- Relative Abundance/Population Estimates:
 - Beach seines and otter trawls show relative abundance over time and seasonal change. They are less reliable showing spatial differences. Schooling species lead to high variation over area at any given time, but with multiple stations, data show patterns over time. So far limited by the inability to successfully collect one full year of seasonal data (trip attempts were sometimes weathered out)
 - An EIS only requires data for presence/absence/ and perhaps some relative abundance. Actual population numbers are not necessary
 - Actual numbers are useful in long-term monitoring and if you want that data, you need to collect it before the project goes forward.
 - Absolute population numbers require considerable more effort.
 - Project effects would be masked by the many variables. Variability in marine populations elsewhere in the State remain unexplained.
 - Population estimates are not necessarily a plausible goal
 - Generally striving for an index – factors that affect value of index:
 - Standardization of trawls
 - Coverage of all habitats - rocky shorelines

- Catch efficiency of gear
 - Trawl tow done by distance instead of time or fixed time tows that standardize data to catch/meter
 - Consistency in towing with or against tides – net flares better going against current, towing into tide the rope runs into the bottom
 - Use camera or bottom contact (by feel) for time start/end
 - Adjacent tows to determine catchability
 - The more tows the greater chance of catching less common species
- Sample Periodicity
 - Concern about hitting the spawning period - especially for herring
 - Flexibility to stay longer if not when anticipated in sampling schedule could be helpful but the vessel schedule is also a factor in flexibility.
 - Could expand sample time on ground
 - Currently striving for a mid-month sampling – possibility to add interim trip around June 1st for herring spawn deposition
 - ADF&G assessing mature spawning adults in 08, expecting status quo. ADF&G has several years of data, but still a snapshot in time difficult to capture overall population fluctuations
 - Should boat surveys coordinate with or between ADF&G aerial surveys? Aerial surveys usually 2/week. Haven't captured a spawning event in 3 years. ADF&G could try to maximize coverage when Pentec not surveying.
 - Bird data can provide insight into spawning – especially gulls and scoters
 - Consider combining ADF&G and private data sets
 - Processing all data back to 1978 would require a grant funded project
 - Ice conditions may preclude winter study – this year no ice until late November – access variable from year to year. One possible solution is to set up a barge camp on shore from which to do studies.
 - March and November could be possibilities, but Dec/Feb short daylight period adds to difficulty and safety. In February, the beach is a sheet of ice, lots of ice shelves. What is the objective of winter sampling? Can't use same methods therefore you generate data that is not comparable. Go during low tidal (neap tide) event. Diving – ROV through the ice.
 - A Port facility would likely not shut down in the winter. There is an assumption that there is year-round shipping
 - There could be restrictions on port operations in winter
 - PLP trace element sampling planned for July 2008 – except for species that are not present then; do salmon later and, Dolly Varden earlier. Sample a couple of taxa seasonally for intra-annual variation. Resident species sampling could be yellow fin or starry flounder. Could add rocky habitat species (e.g., mussels).
 - May consider increasing sampling to the east side of Iniskin Bay – that's where herring activity is. Look for herring spawn on beach. Studies did expand the concentration of species at the head of Iniskin Bay, nothing

was notably different. There might be a couple of beaches on the east side that are accessible, it's a long ways away

- PLP Fall 2007 and 2008 studies have added seining in a saltwater lagoon at AC point where there is juvenile Coho rearing.
- Attempts may be made to get up to the head of Iliamna Bay which could be important if there were plans to have a road cross there. Access at this site is difficult.
- There may be side scan data for Port Site 1.
- Interesting to note that there is more juvenile herring at a higher relative abundance now than during earlier studies when spawning was more robust.
- There is a later onset of spawning than in earlier studies
- Disease can affect herring weights and spawning period

General Meeting Comments

- Review of documents have a short turn around time, members would like more time to review
- Would be nice to have a camera at Port Site 1 and/or North Head to aid consultants in knowing ice conditions.
- Meet again in 1-2 weeks after study plan is sent out – Jon is in town in January.
- Access to data would be helpful

ADDENDUM: Written comments provided by e-mail to Charlotte MacCay on 12/18/2007 by Ted Otis (ADF&G). This e-mail was circulated at the 12/19/07 Marine TWG meeting.

Charlotte,

Please provide a phone number so Ken and I can teleconference in tomorrow morning, as planned. In response to your request, I'm providing the following list of concerns/suggestions for tomorrow's teleconference. Sorry for the late submittal, but you didn't give us much time to prepare for this meeting.

1). SPATIAL SCALE OF MARINE WORK: As I alluded to in a recent email to Mike Smith regarding topics for their upcoming Agency Meeting (see email below), none of the discussion about the port facility, nor Pentec's nearshore marine studies, address the likelihood that dredging may be needed for deep draft vessels to access the port. This area of Kamishak Bay is characterized by a wide shelf (3-6 miles) of relatively shallow (4-9.5 fa) water between the proposed port sites and deep water offshore. According to Steve Hodgson's presentation at the recent Pebble Agency meeting, deep draft vessels will require at least 50 feet of water to access the port site. NOAA charts for the area show several 6 fa (36 ft) humps between the port site and deep water (> 10 fa) up to 10 km away in Cook Inlet. While tides in excess of 14 feet do occur in this area, they are not frequent (~ 200 d/yr) nor high enough (max 17') to accommodate safe, daily, year round access for deep draft vessels without dredging a channel. To my knowledge, no attempt has been made to characterize marine fish resources along the access corridor to/from the port site that would potentially be affected by dredging and/or high vessel traffic. The spatial scale of Pentec's SOW should be expanded to cover areas offshore along this transportation corridor.

2). ARE THE MARINE HABITATS CURRENTLY SAMPLED REPRESENTATIVE OF THOSE AVAILABLE: Pentec's characterization of nearshore marine fauna is limited to habitats effectively sampled by the limited gear types they're using (e.g., "low-gradient, fine-sediment beaches in Iniskin, Iliamna, and Cottonwood bays at higher tidal elevations" and "soft-bottom, subtidal areas"). To my knowledge, Pentec has made no attempt to quantify what proportion of the available habitats in the vicinity of the proposed port sites is represented by the limited habitat types they're currently sampling. It is therefore very difficult to evaluate whether Pentec's data are representative of the area as a whole, or just a small portion of it due to the limited habitats sampled.

3). NEED OTHER METHODS/GEAR TO SAMPLE HABITATS NOT REPRESENTED BY CURRENT SAMPLING: Pentec should consider deploying an ROV or video sled to characterize marine fauna in all the nearshore and offshore habitats potentially affected by the port facility and access corridor, not just the habitats their currently used gear types can effectively sample.

4). MORE INFORMATION NEEDED TO EVALUATE PERFORMANCE OF SAMPLING GEAR: Pentec's SOW does not specify what direction tows are made during their offshore otter trawling activities, relative to tidal currents at the time of the tow. Tidal currents in narrow embayments in Cook Inlet can be significant and should be accounted for during trawling activities as they have the potential to affect gear performance.

5). NEED TO EXPAND SAMPLING PERIODICITY AND DURATION TO ACCURATELY CHARACTERIZE SEASONAL USE: Pentec made the statement in one of their SOW's that their 2006 spring surveys were conducted during peak Pacific herring spawning periods. While that may be generally true from a historical spawning timing perspective, it did not appear to be true in 2006. Their spring cruise schedule in 2006 was April 24-28 and May 14-18. ADF&G conducted periodic aerial (April 25-June 20) and vessel (May 2-8 and May 15-23) surveys in Kamishak Bay in 2006 to monitor herring abundance and distribution. We did not document a significant volume of mature adult herring in the Iniskin or Cottonwood/Iliamna survey areas until May 22, after Pentec left the area. This area has historically been an important spawning (and presumably, rearing) area for the Kamishak Bay stock of Pacific herring since ADF&G began closely monitoring the stock in 1978. However, the stock is presently at a low point and spawning abundance and distribution has significantly contracted from levels historically documented. Therefore, it may be difficult for Pentec's short study duration and brief, periodic cruise schedule to fully capture how important this area is to the long-term health of the Kamishak stock of Pacific herring. Pentec should consider expanding the number and/or duration of their sampling events to accurately characterize seasonal use.

6). NEED MORE CONSISTENT TEMPORAL COVERAGE TO DEFINE SEASONAL USE: To my knowledge, Pentec has very little fall data and no winter data. They also don't appear to have any single year where they successfully completed sampling events during each target "season". They therefore will have to combine sample events from different years to try to characterize seasonal use of the area, an approach that may introduce inter-annual bias. Pentec should strive to sample all seasons (including winter) during each year for multiple years so they can better characterize seasonal use and any inter-annual variation that may be associated with it.