

Technical Working Group – Marine Organisms TWG

Pebble Project

November 21, 2008

Atwood Building Room 1270

Minutes Recorded by Charlotte MacCay/Pebble Partnership (PLP)

I. PRESENT:

Andrea Meyer (ADNR)
Jeff Estensen (ADF&G)
Brian Lance (NMFS)
Phil Brna (USFWS)
Ellen Lance (USFWS)
Leah DeRocher (USACE)
Jean Zodrow (EPA)
Jon Houghton (Pentec)
Jim Starkes (Pentec)
Charlotte MacCay (PLP)

Public -- none

ADMINISTRATIVE

- Jeff Estensen was appointed interim lead.
- Ted Otis or Ken Goldman have been suggested as possible leads, although there was some concerns related to their ability to travel to the meetings. **(Agency comment inserted during review): Neither attended the meeting because of frustrations with the TWG process as PLP currently has it structured.**
- Input will be sought from Scott Maclean of ADF&G regarding who in ADF&G may be able to take on the responsibilities of being the lead.

Future meeting agendas will be distributed in a more timely manner.

- TWG Guidelines and Protocols were briefly reviewed since this was the group's first TWG meeting since 12/19/07.
- Add Brian Lance and Doug Limpensel to the contact list.

CHARACTERIZATION/MONITORING

(PLP) PLP would like to clarify the types of data it is collecting to better facilitate future discussions. The data collected to date have been collected for site characterization. The data are meant to be used to write the Affected Environment

Section of the NEPA (EIS) document. Because NEPA calls this “baseline information” PLP has also been referring to these data as baseline data. This has led to some confusion. PLP is trying to avoid any further use of the word ‘baseline’ to minimize confusion. To scientists, baseline means something quantifiable that can be used for comparison with data collected during operations to see if there have been any impacts. That was not the intent of the data we have collected to date. Although PLP hopes that some of these data will be useful for monitoring purposes as well. PLP is finishing up the characterization data and moving into monitoring data, which will be used for comparison purposes with data collected after operations begin, but this term is causing confusion as well. Some people interpret monitoring data to be the data collected during operations. PLP considers monitoring to include data collected prior to operations for use in comparing pre and during/post operating conditions, for clarity these data are now being called pre-term monitoring data.

(PLP) This is a new change in the use of the terms, and the clarification of use of terms needs to be incorporated by the consultants in the future as well. There are some times when PLP and the consultant are hoping that the characterization data may be useful for monitoring as well and we need to be clearer in stating those objectives.

(Agency) Consultants need to be more clear on what is characterization and what is pre-term monitoring.

NON-BINDING INPUT

(PLP) PLP would also like to clarify that we are asking for speculative input at this time. We are aware that you do not have the data from the studies done to date to learn how they are working. We fully expect that as the data become available, and the agencies complete their review, that the agencies may have new input or want to change their mind about previous recommendations. There is nothing binding about any of the recommendations you make during the TWG meetings, you can always refine your input based on data as they becomes available. PLP is just trying to establish open dialogue and set studies up as best as possible.

STUDY PLANS

(PLP) In response to the comments from the agencies that study plans were not available for review until too late in the season, PLP has scheduled its budget review process earlier in the year allowing consultants opportunity to develop their study plans earlier. We expect study plans to be ready sometime in January. At the Steering Committee it was discussed that the agencies should have one month to review the study plans prior to having a TWG meeting to discuss them. It would be helpful if the agencies put their requests for changes to the study plans in writing along with their rationale for the change. PLP will respond in writing to comments on the study plans within approximately 2 weeks of the TWG meeting explaining which revisions are being incorporated, and where revisions are not incorporated, the reason why that suggestion was not incorporated. There can be further discussion on the study plans and proposed revisions at subsequent TWG meetings.

- (Agency) When PLP does not incorporate agency suggestions they need to respond in detail with a reason that is longer than a sentence why they did not incorporate the suggestion.

(Pentec) A lot of what was done differently in the marine program this year was in response to ADF&G suggestions. The person who made the suggestions is not present today, which is too bad as we were hoping to discuss those changes with him. He can get a copy of the Agency Presentation on disc which can bring him up to date.

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS - INTRODUCTION

(Pentec) Goals – describe what’s out there, develop a data set to guide project design.

(Pentec) Background chemical data analysis is not yet compiled with final QA/QC

(Pentec) General comments on the 2008 program:

- Sampled (beach seine and trawls) March through November
- Primarily used beach seining and otter trawls for fish sampling, consistent with past study years
- Added gill /trammel nets in April, June, August, and October
- Collected baseline chemistry samples for *Fucus* (rockweed), and mussels in May, July and September
- Collected baseline chemistry for salmon, halibut, flatfish, and Dolly Varden as these species were available during the year
- Diving for subtidal characterization was partially done in July and will be done again in 2009
- Upper Iliamna Bay can only be reached at extreme high tide, the study team has only been able to access up there once; this area will be sampled again (30-ft beach seine) in spring of 09.
- There are lots of stations, as the studies were covering four potential port sites. Data from sites which are not developed into a port may be useful as reference sites as part of a pre-term monitoring plan.

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS - HERRING

- There have been intertidal spawn surveys for the last two years and near shore adult surveys with gill nets in spring of 08.
- The net mesh size is 1/2 “ to 2” variable mesh.
- Historical Fish and Game surveys showed herring spawning near Diamond Point – this are will be added to the study plan for 2009.
- Spawn was found around the islets in May. By mid-June, these eggs had all hatched out.
- In Mid June there was lots of new spawn in front of Port Site One.

(Agency) Are you seeing spawning or just eggs?

(Pentec) We did not see milt in the water, but got gravid adults in the gill nets in May.

(Pentec) There was one surprising seine set in March where the herring were all young of previous year. Set sin June caught a huge number of age one fish. One day, in about four sets along the west shore of Iliamna Bay the average catch

was nearly 8000 fish/net. One set had over 20,000 fish. We sampled 400' of the total shoreline and could project a great many fish along the entire shore.

(Agency) How were sets distributed over time?

(Pentec) March through Nov but sets were more probably efficient in May through August when there was better weather.

(Agency) What were the survey conditions?

(Pentec) Generally pretty turbid, not very clear water in inner Iliamna Bay.

(Agency) Ask ABR if aerial surveys ever show schools of fish?

(Pentec) ADF&G aerial surveys in the 80's and 90's showed herring in the area

(Agency) It is typical for herring to have boom and bust years.

(Pentec) Yes but here there was a healthy fishery in the 70's and 80's, that declined, then ADF&G closed the fishery. It remains a mystery why the stock declined. It may have been disease.

(Pentec) Our 2008 data showed herring to be more abundant than past years,

(Pentec) We saw spawning in the area in 2008, we have not seen spawning the previous two years. In the past years there was no observed spawning, but larvae and young of the year were always present in spring and summer. We had assumed that age one fish came from another area and moved into the bay. That assumption may still be true in part.

(Pentec) In October and November 08, we still saw young of year herring in the shoreline areas.

(Pentec) Herring seem to move to areas dependent on the water temperature. When the inner [Iliamna] bay gets cold (1°C or colder), the herring move to outer bay (both young of the year and larval). Fish may be present year round following the ice in and out as it freezes and thaws.

(Agency) What do you think happens in winter?

(Pentec) We do get excluded from doing surveys in winter – the whole bay can fill with ice. Satellite ice maps show this occurrence to be fairly frequent.

(Agency) Are there any temperature devices to correlate presence of fish?

(Agency) Prince William Sound has winter work – but it has less ice. ADF&G may have information that we could correlate. They may go deep and fast during winter.

(Pentec) We have temperature meters we could leave out for a month, but we don't know how well they will really last in winter.

(Agency) Endangered species are in the area in the winter. We need to know why the sea otters and Steller's eiders are in the area in winter.

(Agency) We don't expect otters are feeding on herring.

(Pentec) Tanner crabs are there and numbers increase in fall: they may be a food source for the otters.

(Agency) The presence of herring explains what there are such high numbers of scoters in the area. There are numerous papers written about scoters following the “silver wave”

(Pentec) Scoters are common in the fall at the same time we are picking up young of the year herring in the nets.

(Pentec) We only capture herring in bottom trawls in the fall when there is decreasing temperature and or weather conditions near shore. Although you may see some large fish in June, the cut off is about 100 mm before starting to disappear from the near shore area. The fish seem to move out at that size.

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS LAGOON SAMPLING

- (Pentec) We are looking at sampling lagoons more intensely. There are three lagoons: AC Point Lagoon – this lagoon is perched behind a natural gravel pit. There is some fresh water input, it floods at high tides.
- Cottonwood North Lagoon – This lagoon has no sill. It is very sheltered and attracts a large number of juvenile salmon. Drains substantially at low tide.
- Cottonwood South Slough – This lagoon is at a creek mouth. Sometimes it drains, and sometimes it doesn't. It has variable fish presence.

(Pentec) We haven't seen many birds in the lagoons, just a few sandpipers. Looking at the ABR maps, the birds seem to be located at more gravelly areas or at the heads of the bays than other sites.

(Agency) Curious what birds do you see in mid-summer when ABR is not surveying.

(Pentec) There are a few birds, we don't see herons, terns or mergansers that would exploit the high herring abundance.

(Pentec) We see tiny flounder in the lagoons and some eel grass patches.

(Agency) Is this the only eelgrass in the area?

(Pentec) No.

(Pentec) The Lagoons seem quite productive. Lagoon-like structures could maybe be constructed to offset other potential impacts at the port site.

(Agency) Are there any rocky outcrops with kelp?

(Pentec) Yes, along the north side of Iliamna Bay associated with steep mountainside slopes.

(Agency) Is PLP looking at putting the road in Y valley instead of along the coast?

(PLP) PLP is still juggling which option would be best.

(Pentec) We used a 30' beach seine in the lagoons instead of a 120' beach seine. The two nets have a similar catch/unit effort (as we showed in Turnagain Arm). In general we catch:

- May – lots of chum
- June – chum and pink fry and other species

- July - chum only
- August – no chum
- October caught two Coho in AC Point Lagoon in 2007, but none in 2008 .
- The catch seems to be affected by a temperature

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS – LITTORAL SHORELINE USE BY FISH

(Pentec) There is heavy use by salmonids, flat fish, and forage fish

- Smelt – There are a fair # of adult surf smelt. Larvae are present in late summer. They may spawn here somewhere, but surf smelt spawn is difficult to find.
- Sand Lance - Present in modest numbers. We occasionally bag a couple hundred in a school. Their presence is spotty. There were more in the spring, then the abundance drops off. The species swims in small tight schools.

(Agency) Are there any capelin or gunnels?

(Pentec) . Sand lances are basically everywhere there is sand in Alaska, but there is little sand habitat in Iniskin/Iliamna

(Pentec) There are a few gunnels, and we caught two capelin. We haven't seen any rainbow smelt. Blackburn caught capelin farther offshore Sand lance are basically everywhere there is sand in Alaska, but there is no real sand habitat here. If the habitat is right they would probably be there, but there is no obvious habitat for them here.

(Pentec) The total fish catch was driven by the one large set of herring in March and in June. November 2008 catches were pretty comparable to October 2007 catches.

(Pentec) Pinks are usually pretty much gone here by September

(Agency) Are pinks present in most streams?

(Pentec) They are present in most streams that you would expect to find them in here, but they are not very abundant in the nearshore in this area.

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS – INTERTIDAL INVERTEBRATES

(Pentec) Mysids appear to be the dominant pelagic feeding opportunity. They are amazingly abundant in the beach seines. We lay the net about 100' offshore and pull it straight in, the depth varies with the tide. The heaviest mysid catches have occurred in Iliamna Bay. We often set over the mud flats. Mysids are much more abundant in the beach seines than in the trawls. Crangon is the opposite.

(Agency) Do you trawl from March through November?

(Pentec) Yes

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS – SUBTIDAL

(Pentec) The gill nets and trammel nets primarily catch dogfish, starry flounder, greenling and (in May) herring. The trawl nets catch a diversity of species. There is a high abundance of starry flounder in Iliamna Bay and yellowfin sole in Iniskin Bay. Lots of starry flounder feed along the leading edge of the flood tides over the mudflats. In the late fall trawls catches are dominated by snake pricklebacks, the yellowfin sole move out. Halibut stay abundant through late summer.

(Agency) Are there any saffron cod?

(Pentec) No. There are Pacific cod and Pollock.

(Agency) No Saffron Cod in the fall?

(Pentec) No, there were a few walleye pollock on the last trip, but no cod. A beluga pair was spotted in October, but we are unsure what they are eating.

(Pentec) There are subtidal shrimp which may be possible food for otters, there are also some hermit crabs which they may also eat if they run out of tanner crab. The shrimp decrease in June and July, but come back in August and shift to a larger size. The juveniles may go out to deeper water in early summer and in late summer adults may come in. There were lots of fertile females in the late summer catch. There are also lots of pandalids in summer.

(Pentec) Tanner crabs may be increasing over time in the area.

(Agency) They have recently opened up Kachemak Bay tanner fishery for personal use, whereas a few years ago the tanners had disappeared.

(Pentec) Halibut like to feed on tanner crab. The sportsfishing may be taking some predation pressure off of the tanners. One halibut that was caught had over 30 crab in its stomach.

DETAILED REVIEW OF THE ANNUAL AGENCY ENVIRONMENTAL PRESENTATION FOR MARINE ORGANISMS – ESA SPECIES OBSERVATIONS

(Pentec) There were a lot of Steller's Eiders near Diamond Point in March 08. Beluga were present in October this year south of AC point.

(Pentec) Otters were more commonly seen in November than at other times

PLANS FOR 2009

(Pentec)

1. Nearshore – we want to better define what's present in winter and early spring. We will try to sample in February and/or March of next year. Agency members are welcome to come along.
2. Nearshore beach sampling is planned through July to see if this year's large catch of herring was an anomaly
3. Repeat mapping of herring spawn areas, especially around Port Site One where we found spawn this year. WE would like to determine if it is a consistent, repeating occurrence.

4. Conduct more work on subtidal rocky bottoms near the port construction sites
5. Conduct more subsurface sediment sampling using divers.
6. Conduct more detailed investigations of lagoons.

(Agency) What are you analyzing the sediment for?

(Pentec) A wide range of metals including cadmium and mercury, and select samples are analyzed for organics, but not PCBs or pesticides.

(Agency) I am interested in dioxins, that's a PAH.

(Pentec) We are trying to match sediment PAH protocol with CIRCAC – the labs differ a lot. We want a baseline fingerprint of PAH presence in the area. There have not been any man-made chemical parameters sampled to date, but we may want to add them as baseline.

(Pentec) We aren't sure what the eiders do when the ice is there. As soon as the ice is gone they return.

(Pentec) Eelgrass mapping may be helpful, eelgrass is important habitat. We see areas where eelgrass was present in the 1970's and 90's, but was not present in the 2004 – 2007 studies;, some of this eelgrass was back in the 2008 studies. They may disappear from ice scour in some years.

(Agency) The rhizome of the eelgrass would be in the sediment, the whole plant wouldn't be taken away from the ice scour.

(Pentec) Next year we hope to start studies in February or March, but this year we had the boat ready in February, the ice just didn't let out until mid March. In May and June we will do beach seining and look for juvenile salmon out migration as well as looking for surf smelt and juvenile herring. If we find a lot of surf smelt we will try to get a sediment sample of what we think is spawning substrate to see if there are any eggs in the substrate. There is protocol in Washington State to collect substrate samples for this purpose.

AGENCY SUMMARY COMMENTS

(Agency) Salmon move out of lagoons after June, probably based on temperature. IT might be interesting to gather temperature data.

(Pentec) We are trying to better understand what makes lagoons attractive to fish, what difference the sill makes, and to study the water volume relation to temperature ratio and its relationship to freshwater input. Salinity is not as dramatically lower after snow melt effect is gone as we would have expected. The lagoons are great stickleback factories.

(Agency) Lots of points were raised at the last meeting, we need to review how those were addressed.

(Agency) We need to know the project design before we really know what studies need to be done.

(Agency) Hydrocoustic monitoring should be considered as a possibility for monitoring.

(Pentec) Hydrocoustic monitoring would show the distribution of fish in the water column as do the gill and trammel net studies.

(Agency) Hydrocoustic monitoring could also cover a larger area over a short period of time.

(Pentec) It requires ground truthing to figure out what you are looking at.

(Agency) John Piatt has done a lot of hydroacoustic work in Kachemak Bay for forage fish and it takes a lot of practice to develop the signature of what you are seeing.

(Agency) LGI is doing it for a Coal Project and they are getting better over time. They are getting a better picture over a larger area. I don't know if it could be done in the winter which, according to ABR, is the critical time for ESA species here.

(Agency) What other molluscs were found?

(Pentec) the dominant prey for birds was *Macoma balthica*. In the deeper mud there are some fairly abundant *Mya truncata* and cockles. There are a few other *Macoma* species associated with the boulders and cobbles. In deeper water there is *Yoldia* and *Macoma*

(Agency) Winter ducks stay close to shore to feed to conserve their energy.

(Pentec) *Crangon* seem like the best caloric intake bet for winter eiders

(Agency) What about mid-water trawls?

(Pentec) We have pulled the otter trawl in midwater but didn't catch anything.

(Pentec) Winter work is a problem. Nets get frozen in or catch large volumes of ice.

MONITORING REQUIREMENTS

(Agency) We are looking to monitor change in environmental components due to effect of the action vs. natural variability. We will be asking for BACCI monitoring. The agency wants well beyond what's required by NEPA. A fairly rigorous BACCI approach for three years with reference sites. We have been asking for BACCI monitoring since early in the game and want you to start doing it now.

(PLP) Under what authority would BACCI be required. It is not usually required as part of a project monitoring program.

(Agency) Due to the size of the project, the scale of the mine, and the largest sockeye run on the planet we will require a very robust study. These stakes are much higher than other projects and what is required for this project may not have precedent. The authority is under the Magnuson Act for ESA consultation.

(Pentec) I have a hard time envisioning how you would do that at the port site.

(Agency) It might be hard at the port site, but you certainly can at the mine site.

(PLP) It is not easy to set up reference stations for either site.

(Agency) BACCI is fairly powerful for ecological comparisons. I agree it is more difficult at the port.

(PLP) It is difficult at the mine site too, but that is a discussion for a different TWG.

(Pentec) There will be substantial physical structure changes at the port including probably fill and dredging. We can describe what is there now and monitor for what is there after the changes are made. What is most important is how the changes affect the long term populations by looking at the variability in the data.

(Agency) BACCI would provide early signals of change.

(PLP) It is not just an issue of precedent, it is also an issue of finding suitable reference sites. BACCI is an agenda item in and of itself. IT is not a quick topic to discuss.

(Agency) It would be helpful to get the BACCI discussion fleshed out before we go much further.

ACTION ITEMS

Ask ABR if aerial surveys ever show schools of fish.

PLP

NEXT MEETING

Study Plans should be distributed for review in January. A subsequent meeting would be held in February.

It may be helpful to discuss BACCI further at the next meeting.