

**Wildlife Technical Working Group
Pebble Project
January 11, 2008**

Minutes recorded by Charlotte MacCay/Bristol

Present:

Tammie Massie/ADF&G
Earl Becker/ADF&G
Judy Putera/NPS
Serena Sweet/USACE
Joan Zodrow/EPA (telephone)
Steve Matsuoka/USFWS
Andrea Meyer/ADNR
Mike Smith/PLP
Terry Schick/ABR
Charlotte MacCay/Bristol

Public Observers:

None

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 choosing a lead).

Administrative Issues

- The Wildlife TWG does not include marine birds and marine mammals; they will be addressed within a separate group.
- It was confirmed that TWGs can be spilt or merged as needed.
- Lake Seals are to be included in a Marine Wildlife TWG.
- Earl Becker volunteered and was chosen as the Wildlife TWG lead.
- Waterfowl will be discussed at another meeting when agencies and ABR can bring more waterfowl expertise.
- The Wildlife TWG will meet again in a few weeks for a half-day meeting to discuss waterfowl and address miscellaneous issues.

Data Requests

- Field sampling dates;
- Previous years' agency information presentations in PowerPoint format;
- A copy of the Draft Environmental Baseline Document methods sections for the various wildlife groups studied (if formally approved for release by Pebble Limited Partnership [PLP]);
- A species checklist for the project area (especially for birds, with seasonality and abundance information in broad categories if possible). This is especially needed

for threatened and endangered species. It would be helpful if the species list was broken down by area of observation (e.g., mine area versus transportation corridor);

- Rationale for selection of species to survey for some studies;
- Dates of raptor surveys so the National Park Service (NPS) can compare Pebble studies with NPS raptor studies in an effort to define the best sampling dates for surveys;
- Number and dates of raptor surveys each year;
- Derive density estimates for raptors (perhaps number of raptor nests sighted per linear length of survey (from Global Positioning System [GPS] track logs);
- Establishing detectability in the raptor surveys (perhaps this can be derived from the second visit to nests for productivity information);
- Raptor survey flight lines (GPS track logs) to determine survey coverage of suitable nesting habitats within the study area and survey coverage in general;
- List the species of shorebirds recorded in the Pebble area to compare to NPS studies in Lake Clark and Katmai;
- U.S. Fish and Wildlife Service (USFWS) does some habitat mapping as a land management agency – they would like that expertise present when the habitat mapping studies are discussed; and
- Provide the protocol for large mammal observations recorded by Pebble helicopter pilots.

PLP Wildlife Study Plan Discussion

OBJECTIVES

- Agencies look at data in two levels, the National Environmental Protection Act (NEPA)-documentation level and a scientific research level.
- Sometimes NEPA-level information is considered inadequate for some members' interest.
- Alaska Department of Fish and Wildlife (ADF&G) has an interest in population estimates to estimate potential impacts to managed species.

STUDY DESIGN

- Pre-consultation with local experts was limited due to a desire to get studies underway immediately, but there was an extensive literature review.
- Methods employed are largely methods that have been used for other large development projects with success.
- There have been four meetings with the agencies to discuss the studies since 2004.
- Species of birds listed by state- and national-level management agencies and conservation groups as “species of conservation concern” are noted and incorporated into the study design.

BIRDS

Raptors

- 2004/2005 nesting surveys were conducted early in the spring when incubation would occur; a repeat survey was made later (2005 only) to assess productivity.
- Productivity (hatching success) is assessed to get baseline data on reproductive success.
- Multiple-year surveys could provide data on annual variation; if there was a natural decline in nest numbers or nest success, annual-variation data would help when trying to determine whether declines are due to project impacts or not.
- Surveys may need to be updated when a mine design is finalized.
- There is some data on raptor nesting and nesting success for the region in the literature.
- NPS has some unpublished Bald Eagle data they will share with ABR, Inc., on productivity within the park and along the coastline. These studies do show annual variation and provide justification to conduct more than 1 year of surveys.
- If these data are to be used for monitoring later it would be good to have more than 1 year of data.
- Weather may promote some of this annual variability and hooligan availability, and may affect Bald Eagles' nesting success along the coast.
- There are few Bald Eagle nests near the proposed mine, but more along the north shore of Iliamna Lake and at the Cook Inlet coast.
- Road Corridor/Port Sampling
 - Habitat mapping extended 1,000' on either side of the proposed centerline (at that time), as seen on the map, but raptor survey areas were much broader.
 - To maximize the amount of data obtained per survey and keep costs down, raptor surveys focused on areas of suitable habitat. The principal investigator for the raptor surveyor (Bob Ritchie) has 30 years of experience with this work in Alaska.
 - Survey areas include forest habitats at pre-leaf-out (April) for tree-nesting species and later (May) for cliff-nesting species. It is understood that the observations in forested habitats are not made with 100% detectability. Similarly, although detectability is higher for cliff-nesting species, it is not 100%.
 - Katmai National Park Service or Susan Savage at USFWS, may have some additional coastal data for raptors. NPS will try to obtain and share these data.
 - When surveying the road corridor, it may be helpful to survey up the cross drainages. This was done at least within the survey area boundaries.

- When the road centerline is finalized, there will be another survey within the 1,000' corridor to determine if any nests are within the 300' minimum buffer from construction activities as established in Bald and Golden Eagle Act guidelines.
- All PLP aerial work is done by helicopter, which allows closer access. Small, quieter helicopters are used instead of larger helicopters. NPS surveys are done by fixed-wing aircraft.
- Surveys for tree-nesting species are conducted in late April, and for cliff-nesting species in May; productivity surveys are conducted in July.
- ABR produced aircraft guidance for pilots to minimize disturbance at raptor nests; originally, this guidance was envisioned to only be used for raptors but the final document applied to all wildlife.
- Detectability and Nest Density
 - There was no second (and independent) observer in the helicopter to derive estimates of detectability.
 - Multiple surveys could provide some data to estimate detectability, but these data are biased as productivity surveys (by design) involve revisiting nests that were noted on the occupancy surveys.
 - Detectability is an inherent issue with aerial surveys.
 - Detectability is probably high for active Bald Eagle nests as the adults are quite visible with their white heads, it's more difficult for abandoned nests.
 - It is important to know specifically where nests are along the road for avoidance during construction, however, at this point, the road alignment is not determined and is subject to change.
 - For construction it is important to know exactly where all nests are located, as currently it is against the law to remove an eagle nest (active or inactive).
 - Abandoned nests cannot be removed unless you have data to show they have been abandoned for 5 years or more; removal requires USFWS consultation and approval. There are some provisions for a "take" permit for Bald Eagles in the works at USFWS, but the policy is not yet officially established.
 - East of New Halen to Pile Bay, the road route is pretty well established, but it is not well defined west of New Halen and East of Pile Bay.
 - Surveys were focused on suitable habitats throughout the study area.
 - Can analyses be standardized to derive density estimates (number of nests/area surveyed)? That number may be inflated because known nests are included from previous studies. Density estimates may be possible by using linear length of survey (GPS track logs), but the study was not designed to determine densities.

- NPS has noted there is a big difference between coastal and interior nest success (higher at the coast). It would be helpful to know the criteria used to distinguish coastal from interior.
- For raptor surveys, there may be a difference between mine site, the road along the lake shore, and the marine coastal nests.
- Where there are large areas without nests, it is difficult to determine if that is because there are no nests present or because these areas were not surveyed due to a lack of suitable nesting habitats.
- Osprey
 - Mostly along the road corridor, about 27% in the Cook Inlet area;
 - May want to look at survey timing for detecting Ospreys, it may not be optimal to survey for Osprey at the same time surveys for Bald Eagles are conducted;
 - Ospreys are known to occur in the road corridor and they will be surveyed more closely after the road is designed; and
 - Osprey numbers are rebounding since the banning of DDT. Osprey can show acclimation to human activity, although adaptability may be different between ongoing human activity and new activity where there was none before.
- Cliff Nesters
 - Golden Eagles – some near the deposit area;
 - Gyrfalcons – concentrated around mine study area; and
 - Peregrine Falcons – four nests, not located near the ore deposit. Up-close photographs have not provided definitive identification to determine if they are the coastal (Peales) or interior (American) subspecies.
- Ravens are also surveyed as raptors will sometimes use their abandoned nests.
- Goshawks are very sensitive to disturbance; they are indicative of undisturbed habitat. One subspecies (not found in the project area) is on the candidate list for threatened and endangered species.
- Wintering Bald Eagles are primarily at the east end of the lake and near Iliamna River. They may be staging for migration or feeding on fish. Local knowledge might provide insight on this behavior.
- Helicopter traffic in the area is to be considered for effects on birds. Helicopter traffic has been in the area for a long time. There was an increase in traffic starting in 2004.

Breeding Landbirds and Shorebirds

- ABR is measuring relative abundance, not true abundance.
- Point-count surveys with distance estimates have been conducted, and they can be used for density determination.

- There is one year of data that is suitable for distance analysis.
- All surveyors had several days of training on distance estimation.
- A laser range finder is also used to obtain distance estimates in the field.
- Roughly, 90% of birds counted are detected audibly only.
- Observations are coded for audible or visual detection.
- Off-road point-count methods are used: 10-minute periods, songs and calls are primary detection; additional observations recorded in transit; an emphasis was put on collecting habitat-use information; primarily walking between points to minimize disturbance; in vast majority of cases, not being dropped off by helicopter at each site; there was one “clean-up day” when scattered sites were accessed by helicopter; and at all times, pilots are required to land at least 100 m from the survey point to minimize disturbance.
- The study is being done primarily to determine habitat-association information for quantitative impact assessments. Ideally, occupancy surveys also would be conducted to correct for overestimates of acreages of high-value habitats, that are projected to be used, for example. Some spatial interpolation analyses may be done to discern “hotspot” areas where a particular habitat is more densely occupied.
- Sample-point distribution
 - ABR used high-altitude statewide NASA imagery to discern distinct photo-signatures in 2004. In 2005, a true color, aerial photo was used, but it didn’t affect selection of sample sites much;
 - Balanced spreading points out widely throughout the study area by placing points in distinct photo-signatures of different habitat types;
 - Wanted to sample all important habitat types to assess habitat value;
 - There was a minimum distribution of 500 meters between points in any one year;
- 2004 and 2005 data were combined to increase sample sizes for preliminary habitat-use analysis (mine data only). Once the habitat map for the area is complete, the habitat-use analyses will be finalized;
- Point counts are a suitable method for this type of inventory study;
- The study was not designed for monitoring purposes and would be designed differently for monitoring. In this case (landbird and shorebird surveys), the inventory and monitoring goals cannot both be efficiently achieved with 1 study design);
- If necessary, PLP can go back to set up for a monitoring program;
- There are very few places in the state where there is this level of detailed survey data within a relatively small geographic area;

- ABR tried to set a reasonable number of point counts per habitat type; this was not based on a set number. ABR ultimately tried to maximize the amount of sampling in the available field time;
- Approximately 14 aggregate habitat types were defined in the mine study area: 17 along the road corridor, and 16 in the Cook Inlet drainages area. These are preliminary breakdowns which will be refined once the habitat maps are completed for these areas;
- Sampling along the road corridor was within 1,000' on either side of the proposed centerline as of May 2005;
- The mine, road, and port areas were dominated numerically by passerines. Project-wide, 4 landbird and 7 shorebird species of conservation concern were recorded;
- Passerines are known to fluctuate in numbers from year to year, especially in areas of marginal habitat. The mine study area is marginal habitat for some of the observed species;
- Broad habitat-value categories for each species (e.g., high, moderate, and low value) will be determined once the habitat maps are complete; and
- Existing literature can provide useful additional data to help determine habitat values to compensate for cases of small sample sizes when using only the local field data.

Shorebirds

- Plots are often used in tundra areas to survey for shorebirds and other cryptic-nesting species, but point counts are increasingly being used for inventory work. Timing is critical in point counts for shorebirds. Many shorebirds are early nesters and surveys for shorebirds need to be conducted earlier than for landbirds.
- Were the shorebird surveys as complete as the landbird surveys (e.g., were any shorebird species missed)?
- There is increasing concern worldwide over declining shorebird numbers; many are listed as species of conservation concern.
- ABR will review the NPS Lake Clark and Katmai survey reports and the Turquoise Lake study. These areas were fairly rich in shorebird species. Data analysis could determine if there is an effective point in time in the spring/early summer when shorebirds are not detected anymore. This will help when including/excluding data by time of season to yield accurate shorebird numbers. An attempt could also be made to account for late arrivals and early departures.
- Comparing PLP's list of species with the Lake Clark studies may be problematic. The Lake Clark study included some habitats not present in the Pebble Study area and the list is not broken out by habitat. In the Lake Clark dataset, there are plots with multiple habitats surveyed.
- Once shorebirds start nesting, they quit making noise and cannot be detected audibly until the young hatch and leave the nest and they are tending broods.

- The shorebirds along the road corridor were an approximate order of magnitude lower in abundance than were present in the mine study area. There is little open wetland and dwarf scrub habitat along the corridor, and the road was intentionally routed away from wetlands where feasible.
- From a global perspective, Alaska is an important place for breeding shorebirds. The Canadian Arctic is drier with less wetlands. Water is the driving factor in promoting good habitat for most species. The eastern coast of Russia is similar to Alaska.

Species of Conservation Concern

- Species of conservation concern are not legally protected, but are typically mentioned in an Environmental Impact Statement as part of an informed evaluation of environmental impacts that may occur.
- Approximately, 80% of shorebird species in the mine site are of some level of conservation concern (if moderate- and high-concern categories are included).
- Typical issues for species of conservation concern include:
 - Habitat loss on their breeding, migration, or wintering ranges,
 - Large staging congregations at coastal sites that makes them vulnerable, and
 - Shorebirds inherently have restricted habitat – coastlines are prone to development.

MOOSE AND BEAR

- These species were well discussed last meeting.
- Hunting areas have been located north of the lake through Steve Braund's studies.
- There will be increased local access for hunting, relative to the amount of habitat expected to be lost from road and mine development. Hunting pressure on moose may transfer to new areas.
- There is uncertainty on local use of these species. In Nondalton, reported moose harvest is about 2-3 per year, but subsistence surveys list 40 /year. Also some moose may be reported multiple times by people who shared in a hunt.
- ADF&G would like to monitor moose better on a 3-year interval census.
- ADF&G will put together some suggested studies to bring to the TWG for discussion. They will include rationale, benefits, error bars, and consider addressing whether harvest impacts may be associated with the potential road.
- The road corridor area is approximately 1/3 the area of a usual Game Management Unit survey. The area could be generally surveyed at a low intensity, with subset areas of interest more closely surveyed to derive sightability estimates.

RARE PLANTS

- The Aleutian Field Fern is the only “threatened” plant in Alaska. It does not occur in the Pebble area.
- Wetland survey crews are keyed in to look for rare plants
- A desktop exercise has been done to determine which rare plants have some potential of occurring in the Pebble area.
- The AK Natural Heritage Program reviewed their collections database within an area encompassed by a 100-mile radius, centered at the midpoint between the proposed port site and the mine site and pulled all records of collections of S2 and S1 species in this area. In total, 17 – 18 species were listed as having some potential of occurring in the area in habitats that are likely to occur. These species are being flagged for wetlands field crews to watch for.

SMALL MAMMALS

- Literature will be used to assess habitat values for small mammals.
- NPS to send recent Lake Clark small mammal survey data.
- In Lake Clark, NPS found some interesting species such as the Alaska tiny shrew.
- Small mammals in relation to their importance in the food web to eagles and raptors and prey availability should be considered.
- Vegetation and habitat data can be used to evaluate loss of small mammal habitat (and raptor foraging habitat).

HABITAT MAPPING

- Habitat values can be ranked, not only for bird nesting, but also for foraging and small mammals.
- Wetlands consultants are mapping the vegetation; ABR works with them so that vegetation map polygons and habitat map polygons share the same boundaries when appropriate (wildlife habitats typically are broader in scope than fine-scale vegetation types). During habitat mapping, some vegetation types may be aggregated into broader types, emphasizing vegetation structure and physiography.

WOOD FROGS

- Occupancy surveys were conducted in 2007 only.
- First-cut estimate indicates perhaps 18% of the lakes surveyed were occupied (formal occupancy analysis not yet conducted).
- Surveys focused on calling male frogs during late May (2007 was a late snow-melt year).
- ABR used field methods outlined by the North American Amphibian Monitoring Program.
- Random sampling of waterbodies was conducted, not a stratified random selection.
- Most lakes were fairly small, equaling ponds.

CARIBOU

- Post-calving animals move through the mine study area in early July.
- NPS may be able to provide ABR advance notice of movements of collared animals, so as to try to catch the large movements of animals through the Pebble mine area.
- With VHF, animals will still need to be monitored.
- Extent of stay in the area is of interest, as well as the peak numbers.
- Pilots are also trained to provide observation data.
- There are no traditional calving grounds in the Pebble area.
- The Mulchatna herd is presently crashing – predator control is being considered in that area.