



SUSITNA-WATANA HYDRO

Meeting Notes Technical Workgroup Meeting on Terrestrial Resources September 10, 2013

- LOCATION:** Alaska Energy Authority Main Office
813 West Northern Lights Blvd., Anchorage, AK 99503
- TIME:** 8:30 AM–2:00 PM (AKDT)
- SUBJECT:** Q3 2013 Update on Implementation of Wildlife and Botanical Study Plans
- GOAL:** To discuss wildlife and botanical work completed to date.
- ATTENDEES:** **Mark Burch** (ADF&G), **Kim King** (ADF&G), **Joe Klein** (ADF&G), **Matthew LaCroix** (EPA), **Maureen de Zeeuw** (USFWS), **Lori Verbrugge** (USFWS), **Phil Brna** (USFWS), **Dara Glass** (CIRI), **Emily Anderson** (Wild Salmon Center), **Wayne Dyok** (AEA), **Betsy McGregor** (AEA), **Brian Lawhead** (ABR), **Terry Schick** (ABR), **Kirby Gilbert** (MWH), **Chuck Sensiba** (Van Ness Feldman), **Jeff Randall** (Solstice)
- ON PHONE:** **Becky Long** (Coalition for Susitna Dam Alternatives), **Bob Henszey** (afternoon; USFWS), **Sarah Bullock** (BLM), **Alan Michnik** (FERC), **Bruce Cain** (Ahtna), **Molly Dischner** (Alaska Journal of Commerce), **Whitney Wolff** (Talkeetna Community Council), **Jan Konigsberg** (AK Hydro Reform), **Bill Wall** (Consultant to Ahtna), **C.W. Harter** (Citizen of Talkeetna), **Janet Kidd** (afternoon; ABR)

MAJOR TOPICS AND DISCUSSION POINTS

(SEE PRESENTATIONS ON PROJECT WEB SITE FOR DETAILS <http://www.susitna-watanahydro.org/>)

INTRODUCTION

- The RSPs, originally filed with FERC on December 14, 2012, have had some post-filing modifications for some studies (e.g., addition of language describing FERC staff recommendations and preparation of technical memorandums). In an effort to consolidate all of the modifications, AEA is posting the Final Study Plans (FSPs) on the AEA Website. This is not a requirement of FERC's Integrated Licensing Process (ILP), but is being done by AEA to make the information more accessible in a consolidated manner to licensing participants. All of the Wildlife and Botanical Program FSPs have been posted, and the remaining studies for other programs will be posted soon.
- Challenges faced during the 2013 field season included a late spring and lack of access to lands owned by some Alaska Native Claims Settlement Act (ANCSA) Corporations. AEA is working with Cook Inlet Region Inc. (CIRI) and the various Cook Inlet Region village corporations to gain permission to access lands owned by those village corporations. The wildlife studies that require ground access to Cook Inlet Region village corporation lands are Moose (browse survey), Large

Carnivores (bear hair sampling), Terrestrial Furbearers, Bats, Eagles and Other Raptors (migration surveys), Landbirds/Shorebirds, Wood Frogs, and possibly Aquatic Furbearers.

- Bill Wall introduced himself. He is working as a contractor for Ahtna, Inc. to conduct studies on moose habitat on Ahtna lands, with the objective of enhancing moose habitat quality. He is hopeful that there may be some synergies that can be gained between the studies ADF&G are conducting on moose habitat and Bill's studies.
- Work has begun on drafting some of the Initial Study Reports (ISRs) since many of the field studies have been completed or are close to being completed for the year.

WILDLIFE RESOURCES PROGRAM

ADF&G is conducting the Moose, Caribou, Wolverine, and Ptarmigan Studies and is working collaboratively with ABR on the Dall's Sheep and Large Carnivores studies; ABR is conducting the remainder of the studies presented.

- Because there was no access to Cook Inlet Region village corporation lands, ground-sampling activities for the studies of Wood Frog, Landbirds and Shorebirds, Bats, Terrestrial Furbearers, and Moose (browse survey) had to be conducted differently than described in the RSPs. In addition, several of the wildlife studies started later than specified in the RSPs because of the unusually late spring in 2013. The ISRs will describe variances from the RSPs and will detail the effects the variances may have had on fulfillment of the study objectives. Three desktop studies were deferred until 2014: Small Mammals, Wildlife Habitat Evaluation, and Wildlife Harvest Analysis.

MOOSE (RSP 10.5)

- ADF&G completed moose collar deployment in March 2013; 40 GPS collars and 60 VHF collars have been deployed. Most of the moose were collared around the inundation zone and corridors. Monthly telemetry flights using a fixed-wing airplane were flown to track radio-collared moose. Of the 100 deployed, 34 GPS and 55 VHF collars currently remain on moose. The others are no longer collecting data as a result of either natural or hunter mortality.
- Flights to conduct the twinning survey were flown from May 15 to June 2, 2013. Sixty cows were located during that survey. Of the cows located, 73 percent were parturient and 30 percent had twins. ADF&G will monitor calves periodically to quantify survival rates and to sample calf weights when able.
- The first year of the moose browse survey was completed March 2013. The study approach was to investigate 35 sample units upstream of the dam site and 35 sample units downstream of the dam site. Within each sample cell, shrubs browsed and new growth measurements were taken within a 15-meter circle to estimate the percent of biomass consumed. The team was careful not to sample on lands owned by Cook Inlet Region village corporations. In the event that one of the pre-selected cells occurred on village corporation land, the team shifted the sampling point outside of the village corporation land. If no alternative site outside of village corporation land was available in the sampling cell, then that cell was dropped from sampling. The biometrician at ADF&G approved this approach.
- If access to Cook Inlet Region village corporation lands is available in 2014, the moose browse survey will be expanded to include the entire Project area. Moose browse and twinning assessments help indicate population health.
- A GeoSpatial Population Estimator (GSPE) survey effort was planned for November 2012, but the necessary snow cover was not present. ADF&G will try again in November 2013. If conditions do not permit that survey, the survey will be conducted in March 2014.

- A total of 427 moose were counted during the late-winter population surveys of the reservoir inundation zone in March 2012 and again in March 2013.
- Once the data are analyzed for the Moose Distribution and Abundance Study, the importance of the inundation zone to moose over-wintering will be determined. It was posited in the 1980s moose study that the inundation zone would be important winter habitat for moose during winters with high snowfall. ADF&G is working to define what constitutes a high vs. low snow year; however, generally speaking, winter 2011/2012 was a high snow winter in Southcentral Alaska and the snowfall in winter 2012/2013 was closer to average.
- Bill Wall explained that Ahtna is interested in enhancing habitat on their land, and they intend to take an ecological approach to enhance moose population. They will incorporate data such as historical fire patterns and moose browsing. Bruce Cain explained that he is with a relatively new entity under Ahtna, Inc. called the Copper River-Ahtna Inter-Tribal Resource Conservation District (CRITR). The goal of that organization is to enhance subsistence resources. Some of their activities include enhancing browse for moose as well as a predator management program. There is a lot of pressure on the subsistence resources on Ahtna lands because of the road system. Bill Wall, Bruce Cain, and ADF&G will meet separately in the future to discuss possible opportunities between their organizations.

CARIBOU (RSP 10.6)

- One of the goals of the Caribou Study is to document the extent of mixing between the Delta and Nelchina herds, because the southern range extent of the Delta herd is poorly understood due to changes in recent years. Initial results reveal that some cows from the Delta herd calved just north of the Denali Highway and then returned to the traditional range north of the Alaska Range. Other Delta herd animals stayed south longer and mixed with the Nelchina herd. In general, more members of the Delta herd have been counted south of the Alaska Range in the last 10 years. Further comparison will be done between this work and the 1980s data. One notable difference between the two datasets is that GPS collaring technology was not available in the 1980s.
- ADF&G plans to redeploy dropped and retrieved caribou collars in October 2013.
- ADF&G flew surveys of the calving grounds to assess calving success, supplementing project flights with normal management flights. They located 128 cows and estimated 84 percent were parturient.
- Bruce Cain commented that the project should be sure to incorporate traditional ecological knowledge from Native elders about the movements of caribou in the project area. AEA replied that this information is being collected as part of the Subsistence Study and TEK interviews; relevant data across various studies will be combined in the future.

DALL'S SHEEP (RSP 10.7)

- Aerial surveys of Dall's sheep were completed in July. Sheep counts were grouped into three geographic locales: Chulitna Mountains (277 sheep), Watana Creek Hills (41 sheep), and West Kosina Hills (194 sheep).
- ADF&G noted that there was a large decrease in the sheep population in this area in 1999 and 2000, due to a harsh winter. Since that time the population has been stable, but is still low compared to pre-1999 levels. The current population size is approximately one-third the size of the population size estimated in the 1980s. It is difficult to directly compare 1980s data to current data because in the 1980s the flights were more limited and because ADF&G is flying a larger area for their study now.
- Between May 29 and June 20, 2013, 3,140 photos were recorded by a time-lapse camera placed at the mineral lick at Jay Creek as part of ABR's field work on the Dall's Sheep study. Sheep were

recorded on the cliffs at the main lick on most of the days for which photos were available, numbering between one to four animals each day. The aerial survey conducted by ADF&G counted 41 sheep in the Watana Creek Hills but, without marked individuals, it is difficult to know how many of those sheep are using the mineral lick. One of the concerns surrounding the mineral lick in the 1980s was that the water in the inundation zone would reach just below the location of the lick, but the current dam modeling shows the water level will be lower than would have been the case in the 1980s.

WOLVERINE (RSP 10.9)

- For the Wolverine Study, ADF&G had planned to conduct a Sample Unit Probability Estimator (SUPE) survey and a survey for Occupancy Modeling (OM) in winter 2013. Because the necessary conditions did not occur, however, only the OM survey was flown (in April). ADF&G plans to conduct both the SUPE and OM surveys in 2014. Initial results of the OM indicate a population density of 5.5 wolverines/1,000 km². Based on the background research ADF&G has conducted, this density is a normal population density for wolverines.

LARGE CARNIVORE (RSP 10.8)

- The study area for the component of the Large Carnivores Study involving spatial modeling of bear population density still needs to be defined. This decision will be resolved in an upcoming meeting among AEA, ADF&G, and ABR, after reviewing the available data.
- ABR is obtaining bear-hair samples in salmon spawning areas downstream of the dam site for analysis of DNA to enumerate the minimum number of bears using the spawning areas and of stable isotopes to elucidate the bears' diet in the area. A total of 52 snares have been deployed in 10 general locations (sloughs and tributaries) thus far. Due to flooding in August, some snares were removed; 43 snares are currently deployed. The hair snags are being checked every 9-10 days.

PTARMIGAN (RSP 10.17)

- ADF&G, in conjunction with Mark Lindberg and Graham Fry of UAF, captured 31 adult ptarmigan and fitted them with tracking necklaces in the spring of 2013. They were not able to collar as many as they had hoped because of logistical difficulties posed by the late spring and persistent snow cover. They went back in August 2013 and collared two males. ADF&G will continue to track the movements of the collared ptarmigan. Initial data analysis reveals that one male traveled 5 miles and one female traveled 3 miles; whereas other collared ptarmigan have moved less than 1 mile.

TERRESTRIAL FURBEARERS (RSP 10.10)

- For the Terrestrial Furbearer Study, samples of scat (coyote and red fox) and hair (lynx and marten) were collected for DNA analysis. The samples are currently being processed at the University of Alaska Fairbanks. Track data will be used to generate occupancy models for each of the four target species.
- The prey population surveys for the Terrestrial Furbearer Study established new sites on state and federal land in summer 2013 because access to some sites previously sampled in 2012 on Cook Inlet Region village corporation lands was not permitted in 2013. Initial results from these surveys revealed areas with highly variable density of snowshoe hares. A similar study is being conducted in Denali National Park by another UAF graduate student under Laura Prugh's supervision. The data from both studies will be compared in the future. In addition to allocation of more study sites, a variance of this study was an increase in the number of sampling grids from 8–10 to 15.

- Vole live-trapping was conducted at 14 new sites and 1 study site resurveyed from 2012. Three species were captured: red-backed vole, meadow vole, and singing vole. The initial conclusion from the 2013 data collection is that all vole species were at low population densities. The vole survey differed from the RSP in the following ways: more sampling locations were allocated, the size of the trap grid was increased from 50 traps/grid to 100 traps/grid, the number of trap-nights per grid was decreased from 1–5 nights to a single night, and the mark–recapture component was removed to allow for greater sampling intensity in the study area. The study team plans to calibrate their single-night trapping data with more intensive data being collected in a similar study in Denali National Park.
- Habitat sites for the hare and vole study components were chosen using vegetation mapping from the 1980s. Snowshoe hares were not studied in the 1980s and different methods were used in the 1980s for the small mammal study.

AQUATIC FURBEARERS (RSP 10.11)

- The Aquatic Furbearer Study field work is currently planned for October and November 2013 and January, February, and March 2014. Hair samples from river otters and mink are needed to measure baseline levels of mercury in animals inhabiting the reservoir inundation zone and associated tributaries. No river otters were trapped in the area in winter 2012/2013. In addition, mink pelts do not have to be sealed by ADF&G, so it was not possible to obtain samples. The plan for the upcoming field work in winter 2013/2014 is to deploy hair snags at locations where river otters and mink are found during aerial surveys of tracks. If hair samples from the target species are not obtained from the snag-sampling effort, then a trapper will be hired. Originally, it was estimated 10 grams of fur would be required to conduct the analysis, but further consultation has led to the conclusion that as little as 15 mg may be sufficient for adequate characterization of mercury levels.
- An aerial survey of muskrat signs (“push-ups” on ponds and lakes) planned for April 2013 was cancelled due to the late spring. Comparable data were collected during aerial surveys for waterbirds and raptors. The first sign of muskrats was not documented until the third week of May 2013, as a result of the late spring and persistent snow and ice cover.
- Aerial surveys for active beaver colonies are planned for October 2013 before freeze-up.

BATS (RSP 10.13)

- Anabat acoustic monitors were deployed at 20 sites in the bat study area and have been collecting data on bat vocalizations since late May and will continue to record until their removal in early October. Potentially suitable roosting sites were surveyed at natural (cliffs, trees) and artificial (cabins, other structures) sites. Access permission was obtained for nine cabin sites, which contained a total of 25 structures. Surveys of these sites revealed no signs of use by roosting bats. Bat calls were recorded at 70% of the Anabat sites, so bats are known to be present in the study area, but their roosting locations are currently unknown. It is possible they are roosting in cliff habitats, but that is unconfirmed at this time.

EAGLES AND OTHER RAPTORS (RSP 10.15)

- A combination of migration and nesting surveys were conducted for eagles and other raptors. A total of 18 observation sites were established for the spring and fall migration surveys. Nesting occupancy and productivity surveys were conducted by helicopter in May, June, and July at locations specific to Golden eagle (cliffs) and Bald eagle (near waterbodies) habitat. Two helicopters, each with a crew of two scientists, were used to cover the survey area for nesting Golden Eagles, which was expanded from 2012.

- Initial results of the raptor study show that nest productivity was low in 2013. A researcher from Denali National Park has found a correlation between Golden Eagle productivity and snowshoe hare abundance. The initial data from the prey abundance study show 2013 is a low year for snowshoe hare abundance, which may account for the low nest productivity. The late spring in 2013 may also be a factor. The survey area for this study is a 10-mile buffer around the inundation zone and a 3-mile buffer around the road corridors. Several pairs of nesting Peregrine Falcons were documented in the study area, whereas no Peregrines were found during the 1980s studies.

WATERBIRDS (RSP 10.14)

- The waterbird surveys began on schedule in late April, but there was not much open water due to the late breakup. As a result, more staging by waterbirds was observed on the Susitna River later in the season than was expected. A total of 38 species were recorded and all observations were of species expected to be observed, except for a single Yellow-billed Loon that was seen on the Nenana River during spring migration.
- The breeding population surveys and Harlequin Duck surveys during June 1–5 and June 14–17, 2013, recorded 32 species of waterbird breeding in the study area. The timing of breeding by dabbling ducks was delayed as a result of the late spring, whereas the timing of breeding by diving ducks appeared to be normal.
- Fall migration surveys for waterbirds are currently underway and will continue until mid-October 2013. The radar sampling site was selected for its proximity to the dam site and the characteristics of the site are very good for radar sampling. The team also is using night-vision equipment, which allows them to place observed birds into categories, but not identify them at the species level. The migration survey consisted of a 45-day period in spring and will be approximately 60 days during the fall, with the end date in October depending on field conditions.

LANDBIRDS AND SHOREBIRDS (RSP 10.16)

- The Landbirds and Shorebirds Study employed ground-based point counts with auditory detections of singing birds from May 23 through June 20, 2013. The team was able to sample for 29 days straight (only one weather day was incurred). Point-count stations (stratified by vegetation type) consisted of 1,367 stations along 113 transects. The 1987 vegetation map was used to identify the vegetation types. Sampling avoided Cook Inlet Region village corporation lands. Some habitat types (e.g., poplar-dominated riparian forests) which occur primarily along the Gold Creek corridor could not be surveyed due to this lack of access to village corporation lands. Additional transect surveys were conducted along riparian and lacustrine habitats, but auditory observations in riverine areas may be excluded from the dataset due to noise obstruction resulting from running water. If these data are excluded from the analyses, they will still be reported.
- The survey for swallow nesting colonies took place during July 1–3 and July 15–16, 2013. This survey was originally planned as a float trip, but it was determined using a helicopter was more efficient. A total of 26 colonies were located containing 1–354 burrows (mean = 37 burrows). Bank Swallows and some Violet-Green Swallows were observed. Some colonies that occurred on Cook Inlet Region village corporation lands were documented but were observed only after landing the helicopter below the OHWM within the navigable portion of the Susitna River.

WOOD FROG (RSP 10.18)

- Wood frog surveys recorded calling males during the spring breeding season; 13 egg masses also were found during the auditory surveys. Seven frogs were captured opportunistically to sample for the presence of chytrid fungus and those samples are being analyzed currently by USGS lab in

Virginia. The study area consisted of the reservoir area, road access corridors, and camp/facilities area. Sampling was conducted at 90 sampling sites by 2 crews of 2 observers. Frogs were detected at 47 of the 90 sites. The probability of detection is estimated as 61% from a single visit, 85% from two visits and 94% from three visits. The start of this study was delayed 2 weeks due to the late spring and delayed melt. Detectability was determined through multiple site visits and the deployment of acoustic monitors at five sites where frogs were detected on the first visit. The deployment of the acoustic monitors occurred from May 31 to June 9, 2013. The audio recordings were sampled in 5-minute intervals for a total sample of 2,015 snippets of audio recording.

FEATHER COLLECTION FOR MERCURY ASSESSMENT (RSP 5.7)

- Feather collection to assess the baseline levels of mercury in bird tissues has been problematic. ABR has been working with the USFWS to obtain the permit necessary to collect eagle feathers from nest sites. Several feathers as well as deceased chicks were observed during the 2013 field season but, without the permit, the crew was unable to collect them. The permit needs to be issued to the USFWS, which then will list ABR as a subpermittee. ABR has provided information throughout the process to the USFWS and will continue to provide needed information to obtain the permit, but the minimum 30-day review period makes it unlikely that any eagle feathers will be collected before snowfall in the study area.
- Feather collection for birds other than eagles has been problematic as a result of species nest distribution and bird behavior. Loons have been observed on approximately 40 lakes, but loons do not line their nests with feathers and dropped feathers have not been located. Mergansers are cryptic nesters so their nests are extremely difficult to locate. No nest burrows were located for Belted Kingfishers. Arctic Tern chicks were observed at 2 small islands in a lake located away from the inundation zone, but the crew did not have a boat to reach the island and the likelihood of finding feathers was low because terns do not line their nests with feathers. Other options for obtaining samples from piscivorous species of waterbirds need to be considered in 2014, including lethal sampling or capture and release with blood draws. Lethal sampling would be more easily accomplished.

BOTANICAL RESOURCES PROGRAM

VEGETATION AND MAPPING STUDY (RSP 11.5)

- Aerometric has acquired the additional high-resolution aerial photography for the vegetation/wildlife habitat and wetland mapping studies, which is expected to be processed and delivered in early October 2013.
- A total of 77 ground-reference transects were established for mapping of vegetation, wildlife habitats, and wetlands. Along the transects, 612 full study plots were sampled. On these plots, formal wetland determinations were made; data were also collected for a number of variables to allow the characterization of wetland types, wetland functions, and wildlife habitat types. An additional 290 rapid-verification plots were established, on which a subset of the data on the full plots was collected to assist in mapping efforts. Big stands of riparian forests dominated by poplars occur along the Gold Creek corridor and that habitat type was not sampled due to a lack of access to Cook Inlet Region village corporation lands in 2013.
- A total of 77,890 acres have been mapped to date. Mapping was minimal during the summer but will pick up again in the fall of 2013. This study varied from the RSP in a lack of sampling on Cook Inlet Region village corporation lands.

- Field data QA/QC is ongoing. The QA/QC process consists of senior scientists looking at the field photos, aerial imagery, and field data to determine if the classifications (primarily wetland type and vegetation type) assigned in the field were correct. In the field, the team will sometimes make a primary call and a “cut-point call” between two possible classifications; in the QA/QC process, these uncertainties in classification will be resolved.

RIPARIAN STUDY (RSP 11.6)

- The technical memorandum relating to the Riparian Vegetation Study was filed with FERC on July 1, 2013. The refinements in the sampling approach for the Riparian Vegetation Study, which were described in the technical memorandum, have been included in the FSP.
- Between June and August, 62 intensive ecological land survey (ELS) plots were established. The ELS plots are designed as permanent, long-term monitoring plots. Some of the ELS plots occur within Focus Areas (stratified by riparian ecotype) and some occur outside Focus Areas. Directed intensive ELS plots were established outside of Focus Areas and were designed to sample those riparian ecotypes underrepresented in Focus Areas.
- Between June and August 2013, 214 Integrated Terrain Units (ITU) plots along 35 transects were sampled for the Riparian Vegetation Study. The ITU plots are designed primarily to provide ground-reference data for the riparian mapping effort.
- A total of 9,484 acres have been mapped to date in the Riparian Vegetation Study. Mapping was minimal during the summer but will pick up again in the fall of 2013. There were no variances from the RSP for the Riparian Vegetation Study.

RARE PLANT STUDY (RSP 11.8)

- During the July surveys, two rare species were identified and collected: *Vicia Americana* (American vetch) and *Eriophorum viridicarinatum* (thinleaf cottonsedge). Specimens were sent to the UAF herbarium for verification. Discussion was held regarding the level of rarity of *E. viridicarinatum*. It is similar to *E. angustifolium* (common cottonsedge) and may be underreported. In some cases, as more surveys are conducted and additional populations are found, the AKNHP has been known to change the level of rarity for some species.
- In August, no confirmed rare plants were collected, but one potentially rare plant, *Potamogeton* sp. was collected for verification by the UAF herbarium.
- The only variance from the RSP for the Rare Plant Study was a lack of field surveys on Cook Inlet Region village corporation lands. The next steps for this study are to summarize the field data and prepare the ISR.

INVASIVE PLANT STUDY (RSP 11.9)

- In 2013, surveys for the Invasive Plant Study were conducted along the Denali and Parks Highway corridors and on heavily used trails emanating from the Denali Highway. Invasive plants were identified and collected and the identifications of voucher specimens are being verified by staff at the UAF herbarium.
- The Invasive Plant Study had no variances from the study plan. The next steps for this study are QA/QC of the field data, confirmation of identifications by the UAF herbarium, and preparation of the ISR. An Ecological Risk Assessment will be prepared (in 2015 for the License Application) after the second year of data collection.
- Discussion was held regarding potentially sampling along the railroad tracks for invasive plants; visual sampling for prominent species like *Melilotus officinalis* from the train as it passed by might be possible.

- Discussion was held regarding the possibility of movement of invasive species as a result of field crews moving between different study sites. With respect to the frog chytrid fungus (not necessarily an invasive species but detrimental nonetheless), ABR has their crews decontaminate their boots in between sampling events at wood frog survey sites. Several of the trailheads on the Kenai are equipped with boot brushes for hikers to use in removing seeds of invasive plant species. Fish Resource permits require that sampling gear is cleaned between different water bodies. Lastly, it is likely that an invasive species management plan will be prepared in 2015 as part of the License Application.

GENERAL

- The ISRs for the Vegetation and Wildlife Habitat Mapping, Wetland Mapping, and Riparian Vegetation studies will contain preliminary classifications for wildlife habitats, wetlands, and riparian ecotypes (Riparian Vegetation Study only).

ACTION ITEMS

Action Items	Responsibility
Refine the study area boundary of spatial modeling of bear population density for the Large Carnivore Study	Mark Burch, Earl Becker (ADF&G), Brian Lawhead, Betsy McGregor
Continue to work through the permitting process with USFWS to collect eagle feathers for characterization of mercury levels	Brian Lawhead and Maureen de Zeeuw
Revise the approach for collecting samples from avian species (non-eagles) for baseline characterization of mercury levels	Brian Lawhead, Lori Verbrugge, Maureen de Zeeuw, Betsy McGregor