



SUSITNA-WATANA HYDRO

Meeting Notes Technical Workgroup Meeting on Terrestrial Resources November 6, 2013

- LOCATION:** Alaska Energy Authority Main Office
813 West Northern Lights Blvd., Anchorage, AK 99503
- TIME:** 8:30 AM–2:00 PM (AKST)
- SUBJECT:** Q4 2013 Update on Wildlife and Botanical Study Plan Implementation
- GOAL:** To discuss wildlife and botanical work completed to date.
- ATTENDEES:** **Mark Burch** (ADF&G), **Kim King Jones** (ADF&G), **Maureen de Zeeuw** (USFWS), **Lori Verbrugge** (USFWS), **Emily Anderson** (Wild Salmon Center), **Dara Glass** (CIRI), **Wayne Dyok** (AEA), **Betsy McGregor** (AEA), **Andrew Fraiser** (AEA), **Julie Anderson** (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), **Alan Michnik** (FERC), **Jennifer Curtis** (EPA), **Cherise Oram** (Stoel Rives), **Whitney Wolff** (Talkeetna Community Council), **Jan Konisberg** (AK Hydro Reform), **C.W. Harter** (Citizen of Talkeetna), **Robin Song** (Citizen of Talkeetna)

This was the fourth quarterly terrestrial resources interim progress Technical Working Group (TWG) meeting for 2013. The quarterly TWG meetings are intended to provide status on study plan progress, communication and discussion regarding any study plan variances that may be required given actual field conditions, and planned next steps.

The meeting agenda, documents, and supporting presentations can be found on the “previous meetings” tab at <http://www.susitna-watanahydro.org/>. These meeting notes are intended to capture the primary discussion points and consultation not included in the provided materials.

INTRODUCTION

- AEA will file the ISRs with FERC on February 3, 2014. Within 15 days of the filing, there will be five study report meetings. AEA will file the meeting summaries on March 5, 2014. FERC will make a determination on any concerns raised by June 2014.
- AEA wants the ISRs to be as meaningful as possible. AEA filed a letter with FERC on October 30 to confirm AEA’s understanding of the ISR goals and proposal for the structure of the ISR documents based on input received from several agency personnel. The ISRs are progress reports of ongoing studies which will include summaries of available results and discussions of variances from the final FERC approved study

plans and plans for 2014. Additional information such as data summaries will be made available via AEA's Website and/or a Web link to a server maintained by the Geographical Information Network for Alaska (GINA).

- AEA will make an effort to provide data where available via Web links. Some data cannot be made publicly available (e.g., locations of cultural sites and radio-collared animals). It will be noted within the ISRs if data cannot be made available.
- The ISRs will report whether or not the study objectives were met in 2013. Types of variances may include those that were intended to reduce risk (e.g., if weather conditions posed hazards) or those regarding land access.
- There was some discussion about the lack of access to Cook Inlet Region village corporation (CIRVC) lands and the attendant effects on studies. AEA noted that a decision was made by AEA early in 2013 to take a step back and work through the process of gaining access to CIRVC lands through the Cook Inlet Region Working Group, which was formed in the spring and is composed of CIRI and the associated village corporations. CIRI and CIRWG are in support of the Project studies occurring and discussions on access permits for 2014 are continuing. It was noted by Dara Glass (CIRI) that the members of the CIRWG will be available to meet with AEA on December 13, 2013 in the afternoon.

WILDLIFE RESOURCES PROGRAM

- Three desktop-only studies—Small Mammals (RSP 10.13), Wildlife Habitat Evaluation (RSP 10.19), and Wildlife Harvest Analysis (RSP 10.20)— were deferred until 2014, but short ISRs will be prepared. The remaining 13 wildlife studies proceeded in 2013.

MOOSE (RSP 10.5)

- ADF&G is continuing to monitor collared moose via telemetry flights and by downloading data from ARGOS. The details of collar deployment were described in the Q3 2013 TWG update.
- A GeoSpatial Population Estimator (GSPE) survey flight will be flown later in November 2013 if snow conditions are suitable. If snow conditions are unsuitable, the GSPE flight will be rescheduled in March 2014. If the GSPE is conducted in March, gender composition will not be included in the survey because the bulls will have already shed their antlers. Not having composition data will not affect the study objectives, however.
- Ice conditions did not allow ADF&G to collar moose downriver from the proposed dam site. Currently, six VHF collars have been retrieved, and ADF&G hopes for suitable conditions to collar moose downstream of the inundation zone.
- ADF&G hopes to have access to CIRVC lands to conduct a browse survey in March 2014.
- There were no variances to the moose study, other than not being able to access CIRVC lands.
- Even without access to all lands, the objectives of the moose browse survey were considered to have been met because the random sampling methodology allowed for potential survey parcels to be excluded in place of others. If CIRVC land access is gained in 2014, ADF&G hopes to focus the browse survey on the reservoir inundation zone, which would require smaller study parcels, as well as additional areas downstream in the Middle River Segment. The ISR will include a map showing which parcels ADF&G sampled (that map also was in the presentation from the Q3 2013 TWG update on September 10, 2013).

CARIBOU (RSP 10.6)

- ADF&G has been combining their monthly telemetry flights with their regular management flights because the caribou study area is so large. ADF&G is also receiving monthly downloads from ARGOS.

- In October 2013, an additional 20 calves were collared as part of regular management monitoring, and 10 collars retrieved from hunters were redeployed. The details of the initial collar deployment were presented in the Q3 2013 TWG update.
- Monitoring shows that caribou are beginning their fall migration and are leaving the study area to head to their wintering grounds near Tok.
- One collared female joined the Fortymile Herd last spring and is now even farther east than the herd's normal range in the Yukon Territory, Canada. ADF&G is in communication with Yukon biologists that are monitoring this individual.

DALL'S SHEEP (RSP 10.7)

- ADF&G's aerial surveys were conducted in June and July 2013 and the ISR has been drafted.
- Surveys for Dall's sheep will take place again in June or July 2014.
- Observations by ABR revealed lower numbers of sheep using the Jay Creek and Watana licks than observed in the 1980s; however, the abundance of sheep has decreased in the Project vicinity since the 1980s as well. In the 1980s, about 25 percent of the sheep population in the Watana Creek Hills used the licks. The highest number of individuals observed during the 2013 surveys was seven at the Jay Creek lick. A time-lapse camera was installed there to record longer-term observations of sheep. The ABR crew also observed a previously undocumented lick across the valley from the Watana Creek lick.

LARGE CARNIVORE (RSP 10.8)

- Spatial density modeling based on existing bear survey data is being conducted by Earl Becker (ADF&G) in collaboration with David Miller of the University of Rhode Island, who is under contract by ADF&G for this analysis. This effort is progressing and ADF&G will produce bear density maps soon.
- The study area for the bear density modeling needs to be finalized. A meeting to discuss this topic was scheduled among ADF&G, ABR and AEA immediately after the TWG on November 6, 2013.
- Bear hair snares were deployed in late July 2013 when salmon first began to arrive in the tributaries and were retrieved in late September. The hair samples are currently being analyzed for DNA and stable isotope data. Although the full results may not be available from the laboratory before the ISR is submitted, ABR will try to include as much data as possible.
- Existing ADF&G data on wolves are being analyzed.
- There have been no variances to the large carnivore study.

WOLVERINE (RSP 10.9)

- Todd Rinaldi (ADF&G) is ADF&G's study lead for this study and will supervise the Sample-Unit Probability Estimator (SUPE) survey later this winter. Louis Bender (ADF&G) is conducting the Occupancy Modeling analysis.
- ADF&G hopes to conduct a SUPE flight survey later in the winter if snow conditions are suitable. If the conditions are not suitable, Occupancy Modeling will be used again, similar to what was done in 2013.

TERRESTRIAL FURBEARERS (RSP 10.10)

- Habitat-specific occupancy modeling will be finalized in 2014.
- There were some issues accessing the study area in winter of 2013 because of the lack of a suitable base of operations nearby. Discussion is currently ongoing with an owner of a cabin that would provide a good base in the central part of the study area.
- The survey area was smaller than planned because there was no nearby operation base and because of the lack of CIRVC lands access.

- Deployment of the lynx hair-snag stations was modified to match the sampling approach used for canid scat to increase sampling efficiency.
- Marten hair could not be collected in 2013 because of a lack of access to suitable spruce forest habitat in the reservoir zone.
- For the snowshoe hare population trend survey, the number of grids sampled was increased from 8–10 grids to 15.
- For the vole population trend survey, the number of trap nights per grid was shortened from up to 5 nights to a single night to increase the area sampled. These data will be compared with mark–recapture sampling using 1–5 trap night sampling being conducted within Denali National Park to estimate population size.
- Field work for scat and hair sampling will be conducted again during January–March 2014. Aerial surveys will be flown along transects from the 1980s; ideally, three flights will be flown during Q1 2014.

AQUATIC FURBEARERS (RSP 10.11)

- Aerial surveys in October 2013 revealed 188 beaver lodges, of which 38 percent appeared to be active. There were a higher proportion of active lodges farther downstream, but that could potentially be a function of lower detectability of inactive bank lodges.
- Dams are not being mapped as part of this study, but are being mapped for other studies, including the fish barrier and instream flow studies.
- River otter and mink transect surveys were not flown in winter 2013 as planned. Instead, sightings were reported during helicopter surveys for terrestrial furbearer tracks, waterbird migration, and raptor nest occupancy and roost surveys. An aerial survey is planned for November or December 2013, pending suitable snow conditions.
- The late spring delayed the appearance of muskrat “push-ups,” so the aerial survey planned for April 2013 was canceled. Instead, muskrat sign was recorded during waterbird migration and raptor occupancy surveys. Due to persistent deep snow cover, the first signs of muskrat pushups were seen in the third week of May 2013. The muskrat survey will be attempted as planned in 2014.
- There were no variances from the beaver component of the study plan.

BATS (RSP 10.13)

- Bat study field effort details were presented during the Q3 2013 TWG update. Bats were detected at 85 percent of the 20 sites where acoustic monitors were deployed. Based on this high level of detection, a second year of study will be conducted in 2014.
- No roost sites were located in 2014. Bats do not travel far to forage, but locating their roost sites will require some additional consideration for sampling design. Because bats have not been extensively studied in Alaska, there is little comparative information to indicate the characteristics of sites likely to be used for roosting.

EAGLES AND OTHER RAPTORS (RSP 10.15)

- Expansion of the 2013 study area for nesting Golden Eagles required the use of two helicopters during the May occupancy survey and resulted in discovering numerous additional nests.
- Nesting success was relatively low and may be a result of the late spring, as well as the current low phase of the snowshoe hare population cycle (because evidence from Denali National Park suggests correlation between the two).
- Transects were flown to survey for woodland raptors. Some of the transects were re-flown intensively to determine the probability of detection.
- Forest raptors probable nesting distributions were not determined in 2013 because wildlife habitat maps are not yet available.

- There were no variances from the RSP for occupancy and nesting surveys.
- Aerial surveys in the Project area downstream revealed short-duration transient concentrations of Bald Eagles around salmon carcasses in the fall and early winter.

No feathers or tissue samples of Bald Eagles were collected in 2013. ABR is working with the USFWS to be listed as a subpermittee on the necessary eagle salvage permit to collect Bald Eagle feathers and added eggs in 2014. USFWS recommends submitting the permit application as soon as possible because it could take longer than the 30-day review period stated in the application materials. A review panel needs to be established by USFWS to review the permit application. May 2014 would be the earliest month ABR would be able to collect these samples, so ABR will target January 2014 to submit the application.

WATERBIRDS (RSP 10.14)

- The aerial surveys sampled most of the same waterbodies that were sampled in the 1980s studies. Seven migration flights were flown in spring, transitioning directly into the breeding surveys.
- Fewer aerial surveys were flown than what was described in the RSP because each survey usually took longer to complete. The interval of 5 days between surveys was maintained as described in the RSP.
- Brood surveys revealed that the timing of breeding in 2013 was fairly similar for dabbling and diving ducks. This ‘telescoping’ of breeding timing may have resulted from the late spring.
- A migration survey using radar and visual methods, supported by a 4-person tent camp, occurred over a 45-day period in the spring and a 60-day period in the fall. Visual observations were conducted during all daylight hours.
- Piscivorous bird feathers collection did not occur because no samples were observed. Further evaluation of the collection method will occur.
- Continuation of the radar and visual migration surveys in 2014 will be evaluated based on the results of the ISR, as described in the RSP.

LANDBIRDS AND SHOREBIRDS (RSP 10.16)

- Ground sampling occurred because most of the species surveyed are small and cannot be sampled well from aircraft.
- Sampling was conducted during the early morning using standard 10-minute point-count surveys. The conditions for sampling in May and June of 2013 were excellent, allowing for 28 days of sampling with only one weather day.
- Riverine habitats and lacustrine waterbodies are typically under-sampled with standard point-counts allocated randomly across the landscape; therefore, those habitats were sampled separately.
- American Dippers were recorded during the riverine surveys in 2013 but they were not very common. Spotted Sandpipers were much more common. Belted Kingfishers were very rare in the study area and were only recorded as incidental observations during the landbird/shorebird study. The Susitna River is not ideal habitat for kingfishers because of the turbidity of the water. [After the meeting, ABR checked with the waterbird researchers who recorded small numbers of Belted Kingfishers during the aerial Harlequin Duck surveys, but only along the clear-water tributaries of the Susitna River.]
- Twenty-six [the number stated at the meeting was incorrect; the correct number is 25], swallow colonies were found, consisting mostly of Bank Swallows, but also a few Violet-green Swallows. Up to 354 burrows (mean = 37 burrows) were observed per colony. The swallow survey was conducted using a helicopter, not a boat as specified in the RSP. Ground observations were made by landing below the ordinary high-water mark along the Susitna River. Elevations of the colonies will be included in the ISR.
- Variances: The plot selection process was modified from the RSP because current high resolution aerial imagery of the study area was not available. Instead, plots were selected using the AVC Level III vegetation types that were mapped in the 1980s. This mapping covered most of the study area with the exception of

areas to the north along the Denali Highway. The other variance for this study was the lack of access to CIRVC lands in 2013.

- The point-count surveys in 2014 are planned on CIRVC land and along the Denali Highway (both of which were not sampled in 2013).
- The combined 2013–2014 point-count data, corrected for detectability, will be used to quantify the population density and breeding population numbers of as many species as possible. A more detailed habitat-use analysis will be conducted in 2014. Some habitat-use analyses will appear in the ISR, based on AVC Level III vegetation types, but will be refined after the Project wildlife habitat map is available in 2014.
- A survey for new swallow nesting colonies and a resurvey of swallow colonies found in 2013 will occur in July 2014. Colony locations may be affected by water-level changes in the Susitna River.

PTARMIGAN (RSP 10.17)

- The transect flights planned for September 2013 were rescheduled and will take place in November or December 2013 because research from the Alaska's North Slope indicates ptarmigan can be spotted more easily when snow covers the ground. Although the RSP stated that transect flights would be flown in March 2013, that was an editorial oversight, because no transect flight was intended for March.
- ADF&G was able to get into upper Busch Creek, but not into upper Fog Creek due to heavy snow cover in 2013. Several other capture sites were added along the Denali Highway, where there is more access for hunters; those sites will give a good comparison between a hunted versus non-hunted area.
- ADF&G hopes to collar some ptarmigan in the area of upper Butte Creek this winter using snow machines to access the sites.
- Net guns were used to capture animals in place of mist nets. ADF&G also used noose carpets to capture ptarmigan when the conditions were suitable.
- Relocation flights took place in August 2013. Six relocation flights were listed in the RSP, but ADF&G may conduct 12 flights, which would improve the accuracy of the geospatial modeling.
- ADF&G plans on collaring additional birds in 2014.

WOOD FROG (RSP 10.18)

- Auditory surveys of calling male frogs were conducted in late May and early June 2013, and 13 egg masses also were observed. The survey timing was delayed due to the late spring and some adjustment in the daily timing of surveys was necessary due to helicopter availability.
- National Wetland Inventory (NWI) mapping and available aerial imagery was used to select waterbodies. Wetlands were delineated in areas surveyed for frog presence.
- Frogs were detected at 47 sites. Acoustic monitors were deployed at waterbodies where frogs were detected on the first visit. Landbird/shorebird survey crews also reported incidental detections of frogs.
- Seven frogs were captured opportunistically and swab samples were taken for laboratory analysis to test for the presence of the amphibian chytrid fungus. The samples were sent to a USGS laboratory and none tested positive. Limited statistical power prevented an estimate of detectability from field data, but detectability was estimated from occupancy modeling and acoustic monitoring, which provided essentially identical results.
- Frogs were more likely to be found in water depths greater than 1.5 meters.

BOTANICAL RESOURCES PROGRAM

VEGETATION/WILDLIFE HABITAT MAPPING (RSP 11.5) AND WETLAND MAPPING (RSP 11.7)

- Vegetation/wildlife habitat mapping and wetland mapping field study plots were co-located and the data for both studies were collected concurrently.

- The study teams received the last segment of high-resolution aerial imagery for the study areas from Aerometric in mid-October 2013. Mapping of habitat and wetland boundaries is occurring now using aerial photography, LiDAR imagery, satellite imagery, and the new Aerometric digital imagery. The new imagery has been prepared in both true-color and color infrared formats.
- 2013 Field surveys were completed as planned. Because the plots for the two studies are co-located, some wetland plots were located outside of the 2-mi buffer wetland mapping study area. Those data will be helpful for the landscape-scale wetland functional assessment analyses.
- The ISRs will present the preliminary wildlife habitat types and wetland classes (the final types cannot be derived until the Integrated Terrain Unit [ITU] mapping is complete). The team will derive preliminary wildlife habitat and wetland types in coordination with the wildlife and riparian vegetation researchers working on the Project. A preliminary wetland functional assessment also will be presented in the ISR to illustrate how the final assessment will be conducted in 2014 (full data for the functional assessment will not be available until 2014).
- There were no variances from the RSP for these two studies.
- The ITU mapping field effort will continue through early summer 2014.
- The team plans to conduct field verification of some of the mapping in 2014, and ground-reference surveys will be conducted on CIRVC lands as well.

RIPARIAN VEGETATION STUDY (RSP 11.6)

- Between June and August 2013, 62 ecological land survey (ELS) plots were established to facilitate possible long-term monitoring of post-construction changes in riparian vegetation.
- The lateral extent of the study area was defined by riverine physiography mapped by ABR in 2012. The downstream extent was set at RM 29.5, based on the most recent modeling of river stage and flow effects (see technical memorandum filed with FERC in March 2013 outlining this information).
- Variance 1: Plot allocation in the RSP was based on the size of each Focus Area alone. However, based on agency comments, the plot-allocation procedure was changed and is now based on both Focus Area size and ecotype class using stratified random sampling. Overall there are now more Focus Area ELS plots being established and small Focus Areas with a large number of ecotypes will have more ELS plots established than under the plot-allocation process described in the RSP. When the stratified random sampling appears to be under-sampling a particular ecotype, the crew conducts directed sampling of ELS plots in under-sampled ecotypes.
- Variance 2: The interval between point-intercept locations along each ELS vegetation transect was increased from 0.5 meter to 1 meter (to minimize the overlap in sampling the same individual plants at each point). This increased the radius of the ELS plots to 23 meters (maintaining the same number of point-intercepts as described in the RSP).
- Variance 3: In the RSP, groundwater sampling equipment was planned to be located within the plot center; however, in order to not disturb vegetation, equipment is being installed just outside of the ELS plots. ABR will check on the possibility of any micro-topographical differences between the plot center and the plot perimeter.
- A preliminary set of riparian ecotypes will be included in the ISR (the final types cannot be derived until the ITU mapping is complete).
- In 2014, the crew plans to survey farther downstream in the Lower River and also on CIRVC lands in the Middle River.

RARE PLANT STUDY (RSP 11.8)

- The Alaska Natural Heritage Program (AKNHP) database listed 69 records of previous rare plant collections, mostly along roads, with none documented within the Project area. The search list from those 69

collections represented 39 rare species, of which 14 were relatively rarer. The field surveys focused on searches for those 14 rarer taxa. Two rare species were found: *Vicia americana* and *Eriophorum viridicarinatum*.

- Range extensions of other species were also noted and may be included in the ISR, but likely will be deferred to presentation in the USR.
- There were no variances from the RSP for this study.
- A goal of 2014 study is to survey wet sedge meadow habitat to try to determine the extent of *E. viridicarinatum*, both within and outside of the study area. Also in 2014, more effort will be put into searching for rare aquatic species.

INVASIVE PLANT STUDY (RSP 11.9)

- The AKNHP database listed 21 invasive species previously found in a broad region surrounding the Project area. In 2013, the field crew located 31 invasive species.
- Invasive species were found at 98 of the 107 sites surveyed.
- In Invasiveness Rank for bird vetch was corrected from the Q3 2013 TWG update presentation.
- There were no variances from the RSP for this study.
- The 2014 study goals are to expand the search to ORV trails and other disturbed sites in the Project area, including possibly along Alaska Railroad Corporation land. Sites possibly serving as sources of invasive plants (e.g., Stephan Lake Lodge, High Lake Lodge, Talkeetna Airport) and not within the Project area may be sampled as well.
- Based on data from 2013 and 2014, the ecological risk assessment for invasive species will be finalized and presented in the USR.

ACTION ITEMS

Action Items	Responsibility
Define the study area for the bear component of the Large Carnivore Study	Betsy McGregor, Brian Lawhead, Mark Burch
Complete the permitting process with USFWS to salvage eagle feathers and other samples, as available.	Brian Lawhead and Maureen de Zeeuw
Determine a revised approach for collection of samples from bird species of interest (non-eagles) for mercury bioaccumulation.	USFWS, ABR, and AEA.
Note data that cannot be made publicly available due to State statute in the ISRs, as applicable.	ISR Authors, AEA