

Initial Study Report Meeting

Study 10.16 Landbird and Shorebird Migration, Breeding, and Habitat Use

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Prepared by

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& Services

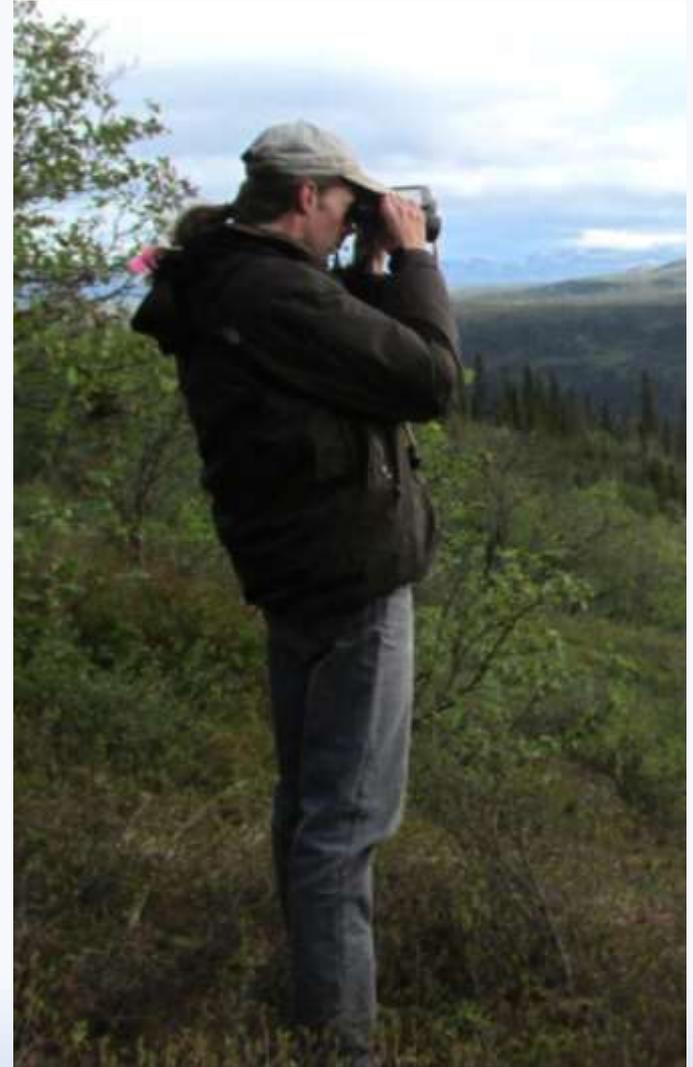


Study 10.16 Objectives

- Collect current data on the **distribution, abundance, and habitat use of breeding landbirds and shorebirds**
- Study area is the proposed dam site/infrastructure area, the reservoir, and along the possible transmission line/road corridors
- Identify **habitat associations** for landbirds and shorebirds (*after the final year of study in 2015*)
- Evaluate **changes in distribution, abundance, and habitat use** of landbirds and shorebirds by comparison with historical data collected in the 1980s (*after the final year of study in 2015*)
- Characterize the migration of landbirds and shorebirds through the proposed dam and camp facilities area (*conducted as part of ISR Study 10.15, Waterbird Migration, Breeding, and Habitat Use*)
- Data will be used to assess impacts on landbirds and shorebirds from construction and operation of the proposed Project

Study 10.16 Components

- Point-count surveys for breeding landbirds and shorebirds in all available habitats (ISR Part A, Section 4.1, p. 3)
- Focused transect surveys in riverine and lacustrine habitats (ISR Part A, Section 4.2, p. 11)
- Surveys of nesting swallow colonies in reservoir inundation zone (ISR Part A, Section 4.3, p. 13)
- Migration survey (ISR Part A, Section 4.4, p. 14; *conducted as part of ISR Study 10.15, Waterbird Migration, Breeding, and Habitat Use*)
- Comparison of results with historical data (ISR Part A, Section 4.5, p. 15; *to be conducted after the final year of study in 2015*)
- Mercury assessment support (ISR Part A, Section 4.6, p. 15; *now part of ISR Study 5.7, Mercury Assessment and Potential for Bioaccumulation*)



Study 10.16 Variances

- **Point-count plot locations were selected using an alternative, stratified random/systematic method** (ISR Part A, Section 4.1.1.1); mirrors method used in the Alaska Landbird Monitoring Survey.
- 2013 study area was about 12% smaller than in the Study Plan because the strata used in the plot-allocation method did not cover the entire study area (ISR Part A, Section 4.1.1.1); unsampled areas were surveyed in 2014 and will be surveyed for a second season in 2015.
- No surveys were authorized on CIRWG lands in 2013, which further restricted the 2013 study area by about 27% (ISR Part A, Section 4.1.1.1); unsampled CIRWG lands were surveyed in 2014 and will be surveyed for a second season in 2015.
- **Helicopter platform used for colonially nesting swallow surveys resulted in both an increase in spatial coverage and survey efficiency** (ISR Part A, Section 4.3.1).
- **Study area for colonially nesting swallows now includes a 2-mi buffer surrounding the proposed reservoir, dam, and camp** (ISR Part A, Section 4.3.1).
- Comparisons of current and historical (1980s APA Project) data on landbirds and shorebirds will be made in the USR after data from all years of study are available (ISR Part A, Section 4.5.1).

Study 10.16 Summary of Results in ISR (ISR Part A – Section 5)

Point-count surveys results, May and June 2013:

- **Landbirds: 53 species recorded.** The 8 most commonly observed species (59% of landbird records) were Fox Sparrow, White-crowned Sparrow, Common Redpoll, Yellow-rumped Warbler, Varied Thrush, Savannah Sparrow, Ruby-crowned Kinglet, and American Tree Sparrow.
- Sufficient data were available and preliminary study-area-wide density estimates were calculated for 38 of the 53 (72%) landbird species recorded.
- **Shorebirds: 11 species recorded.** The most commonly observed species (84% of shorebird records) were Wilson's Snipe, Spotted Sandpiper (mostly on riverine plots), American Golden-Plover, and Lesser Yellowlegs.
- Insufficient data were available to calculate density estimates for any shorebird species.



Study 10.16 Summary of Results in ISR (ISR Part A – Section 5)



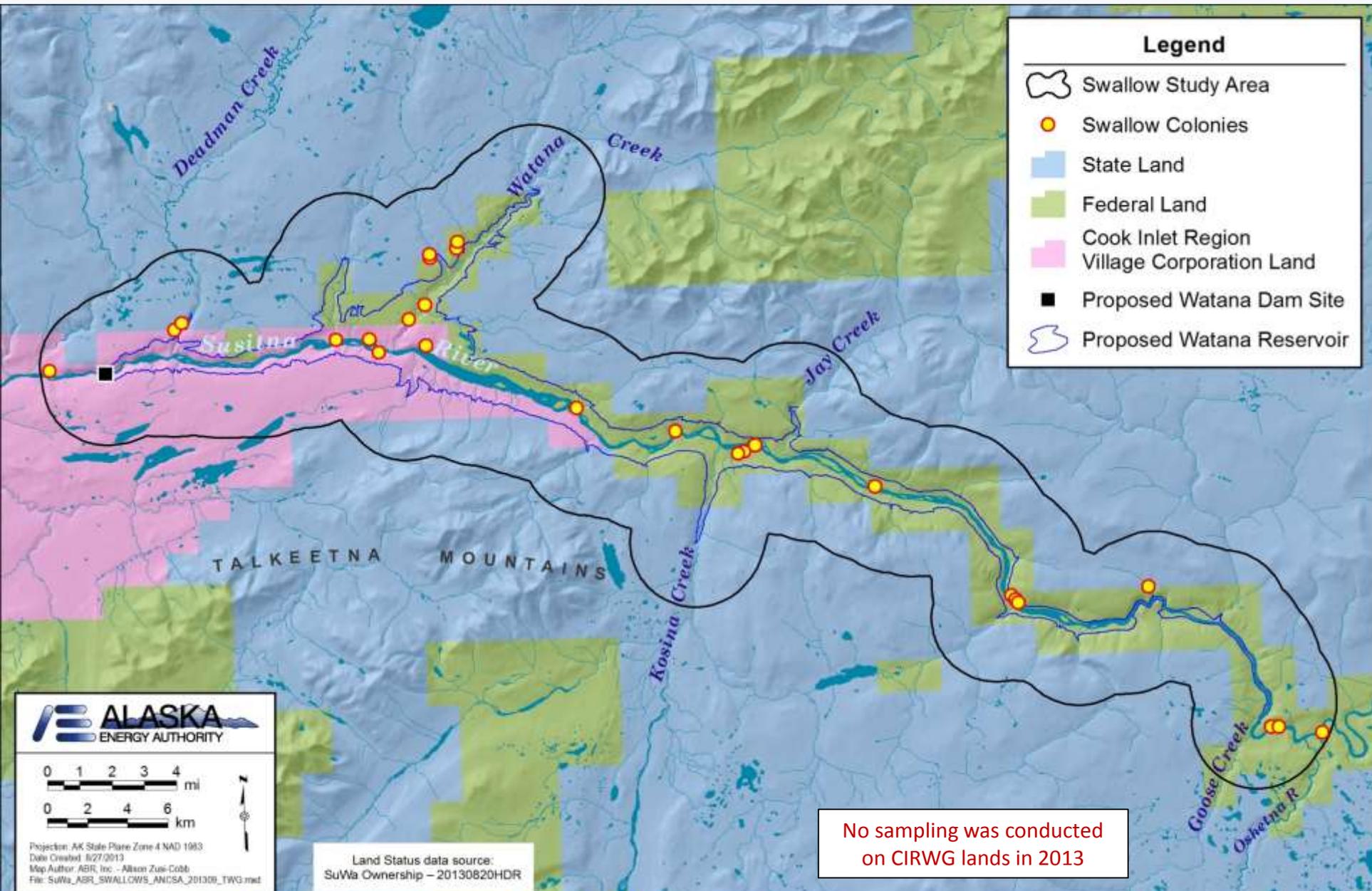
Riverine survey results, May and June 2013:

- Common landbirds: Blackpoll Warbler, Wilson's Warbler, Fox Sparrow, and Northern Waterthrush in vegetated riparian habitats, accounted for nearly 43 % of landbird detections.
- Common shorebird: Spotted Sandpiper accounted for 98% of shorebird observations.

Lacustrine survey results, May and June 2013:

- Common landbirds: American Robin, Rusty Blackbird, Bohemian Waxwing, and Savannah Sparrow in lacustrine margins and adjacent habitats, accounted for nearly 50% of landbird detections.
- Common shorebirds: Red-necked Phalarope (25% of shorebird observations). Wilson's Snipe, Lesser Yellowlegs, and Least Sandpiper accounted for another 55% of shorebird observations.

Study 10.16 Summary of Results in ISR (ISR Part A – Section 5)



Study 10.16 Summary of Results in ISR (ISR Part A – Section 5)

Swallow colony survey results, July 2013:

- 26 swallow colonies were located in the area of the proposed Watana Reservoir plus the 2-mile study area buffer.
- Nearly all colonies were Bank Swallows, but two colonies were of mixed species (Bank Swallows and Violet-green Swallows).
- Colonies ranged in size from 1 to 354 burrows (average = 37 burrows).



Study 10.16 Summary of Results since ISR

- In May and June 2014, point-count, riverine- and lacustrine-focused surveys were conducted throughout the revised study area (included all areas not surveyed in 2013 and the new Denali Corridor East Option).
- Surveys were not conducted in the Chulitna Corridor, which has been dropped from further consideration.
- Data analysis and study results will be prepared for presentation in the USR.

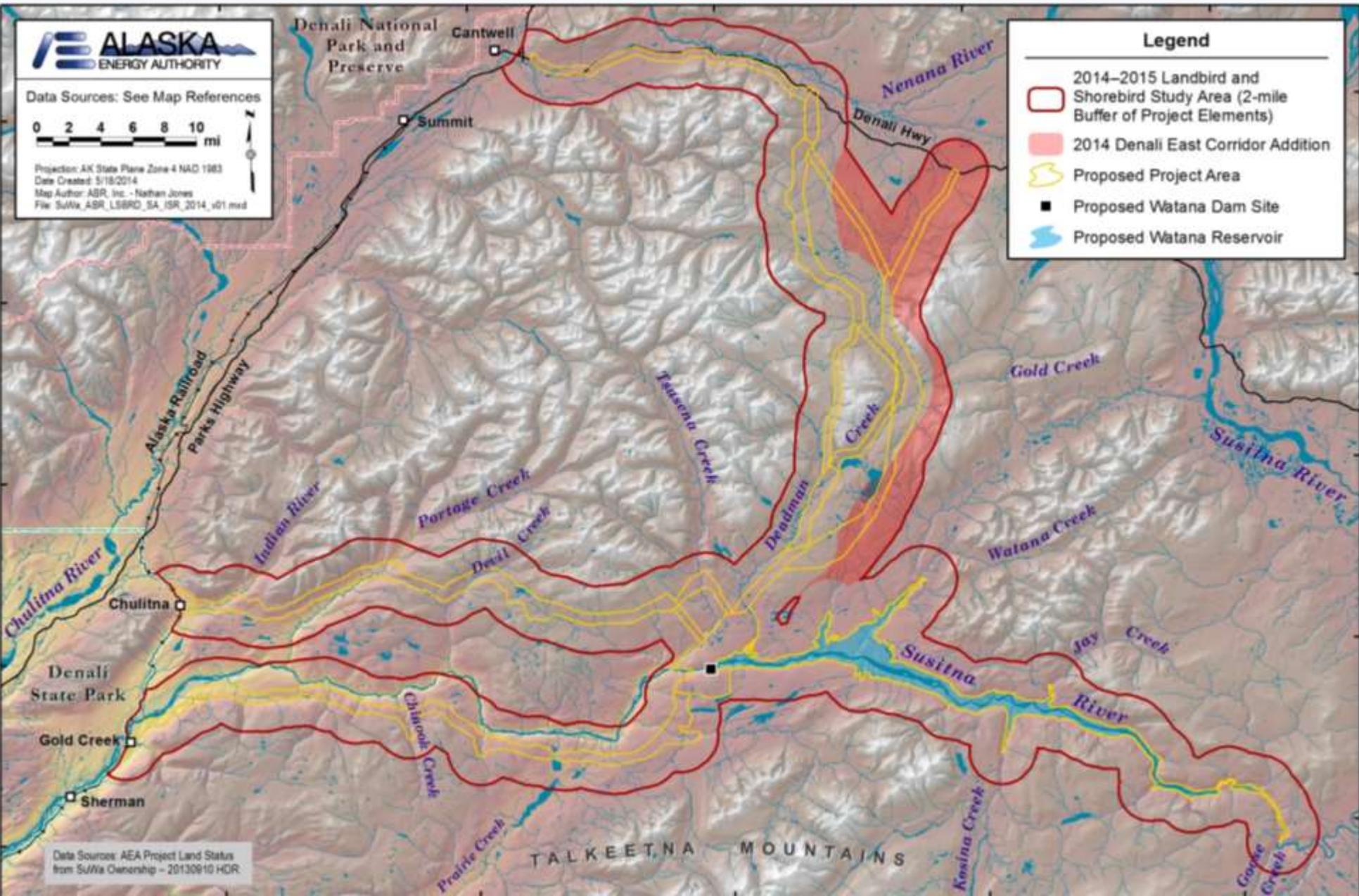
AEA Proposed Modifications to Study 10.16 in ISR (ISR Part C – Section 7.1.2)

- These four modifications (described above under Variances) were implemented in 2013 and will be carried forward to complete the study:
 - An unbiased, stratified random/systematic sampling procedure is used to determine locations of point-count plots.
 - Colonial nesting swallow surveys now employ a helicopter survey platform to increase survey coverage and efficiency.
 - Colonial nesting swallow survey study area expanded to incorporate a 2-mile buffer surrounding the proposed reservoir, dam, and camp.
 - Comparisons of current and historical (1980s APA Project) data on landbirds and shorebirds will be presented in the USR after data from all years of study are available.

AEA Proposed Modifications to Study 10.16 in ISR (ISR Part C – Section 7.1.2)

- AEA added the alternative Denali East Option road and transmission line corridor to the study area; for this study, the new corridor includes a 2-mi buffer surrounding the road and transmission line alignments for the Denali East Option.
- Point-count plots included on the riverine transect surveys in 2013 will be dropped because stream noise inhibited the acquisition of accurate point-count data in vegetated riparian habitats.
- The new bird abundance metric for riverine-focused surveys will be linear densities (birds per km of stream length); for lacustrine-focused surveys, the new abundance metric will be the total number of birds recorded.
- Work in support of Study 5.7 (Mercury Assessment and Potential for Bioaccumulation) has been consolidated under that study.

AEA Proposed Revision to Study Area (ISR Part C – Section 7.1.2)



New Modification to Study 10.16 since ISR

- Distance sampling techniques for line transects were incorporated in the riverine transect surveys in 2014 to allow the possibility of estimating densities for landbirds and shorebirds using riverine habitats. Similar to densities derived from point-count data, the resulting densities would be corrected for detectability. Additional field time required to record angle and distance data was negligible and did not reduce the lengths of stream segments surveyed.
- Applies only to birds using shoreline habitats and riverine waters. Landbirds in vegetated riparian habitats are recorded by a second observer to allow the estimation of linear densities (birds/km of stream length); these landbird densities will be uncorrected for detectability as is the case with the riverine transect data collected in 2013.
- The Chulitna Corridor has been dropped from the study area.

Current Status Study 10.16

- In 2013 and 2014, field surveys were completed as described in the RSP (Section 10.16.4.1.2) and with the implementation of the variances and modifications described in the ISR. Some areas were not surveyed in 2013, but the full, revised study area was surveyed in 2014. The areas not surveyed in 2013 will be surveyed for a second season in 2015.
- In both study years, many more point-count plots were surveyed than the goal of 800 per year listed in the RSP (Section 10.16.8): in 2013 and 2014, respectively, 1,365 and 1,209 point counts were completed.
- Riverine- and lacustrine-focused surveys were completed in both years as described in the RSP (Section 10.16.4.2) and with the implementation of the modifications described in the ISR and in this presentation.
- Swallow colony surveys were completed in a larger study area in 2013 and with greater efficiency than as planned in the RSP (Section 10.16.4.3); the second year of swallow colony surveys will be completed in 2015.
- Overall, the study is on track to fully meet the study objectives.

Steps to Complete Study 10.16 (ISR Part C – Section 7.1)

- Point-count and Transect Surveys:
 - Repeat intensive sampling in May and June of 2014 and 2015 in the revised study area, including point counts in all available habitats plus riverine- and lacustrine-focused surveys; previously inaccessible/unsurveyed lands will be sampled in two years (2014 and 2015).
- Estimation of Breeding Population Densities:
 - Conduct removal and distance analyses using the combined 2013–2015 point-count data set to correct for detectability and calculate density estimates and total estimated birds occurring in various Project subdivisions within the study area (e.g., buffers of each of the proposed Project components).
- Habitat-use Analyses:
 - Conduct habitat-use analyses, based on the final mapped wildlife habitat types, to facilitate work on the Evaluation of Wildlife Habitat Use (RSP 10.19).
- Swallow Colony Survey:
 - Repeat helicopter-based survey(s) in July 2015 in reservoir inundation zone plus buffer, reexamining colonies found in 2013 and searching for more.
- Each of these tasks will be accomplished as described in the ISR.

Licensing Participants' Proposed Modifications to Study 10.16?

- Agencies
- CIRWG members and Ahtna
- Public

