

**Susitna-Watana Hydroelectric Project
(FERC No. 14241)**

**Terrestrial Furbearer Abundance and Habitat Use
Study Plan Section 10.10**

**Initial Study Report
Part C: Executive Summary and Section 7**

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

University of Alaska Fairbanks, Institute of Arctic Biology

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EXECUTIVE SUMMARY

Terrestrial Furbearer Abundance and Habitat Use Study 10.10	
Purpose	The goal of this study is to provide current information on the abundance and habitat use of four species of terrestrial furbearers (coyote, red fox, lynx, and marten) for use in evaluating potential Project-related impacts and identifying appropriate mitigation.
Status	Winter and summer field work was conducted as planned in 2013 and laboratory analyses of DNA from hair and scat samples are currently in progress. Track data, habitat classifications, and genetic samples were collected for coyote, red fox, and lynx. The study team estimated snowshoe hare abundance from counts of fecal pellets and the abundance of voles from trap grids. Habitat use was evaluated by using a combination of data from aerial and ground-based surveys.
Study Components	<ul style="list-style-type: none"> • Sample collection • Genetic analysis • Habitat use and evaluation • Statistical analysis and data interpretation
2013 Variances	Variances became necessary during the winter season due to lack of access to Cook Inlet Regional Working Group (CIRWG) lands; as a result, marten surveys were not conducted as planned in RSP Section 10.10.4.1. Sampling was conducted in as much of the original study area as much as possible, but no surveys were conducted in the Chulitna and Gold Creek corridors in 2013. To maximize sampling effort in areas accessible by snowmachine from the winter base of operations on the Denali Highway, the study team expanded the 2013 survey area to include areas to the northeast of the study area. The study team modified the deployment and use of the lynx hair snags (RSP Section 10.10.4.1) to increase sampling efficiency in the field and to create a survey layout that allowed better comparison of the lynx survey data with those from the canid scat collection effort. Snowshoe hare surveys were conducted in summer primarily as described in RSP Section 10.10.4.1, although the study team changed the way that the sample grid locations were allocated to better account for variability of habitats throughout the 2013 survey area. The vole live-trapping survey also involved slight variances from the Study Plan, in that trapping nights were reduced from the one to five nights originally proposed to a single night per grid.
Steps to Complete the Study	AEA plans to complete all remaining data collection during the 2014 study season, which consists of: (1) the second winter season of field sampling to collect genetic samples and conduct track surveys (which was conducted during January–March 2014); (2) genetic analysis; and (3) snowshoe hare pellet counts and vole density estimates. The variances implemented during

Terrestrial Furbearer Abundance and Habitat Use Study 10.10	
	2013 will be continued, except for the use of motion-sensing cameras.
Highlighted Results and Achievements	Three winter track surveys were flown in February, March, and April 2013. Summer field work on prey abundance revealed low vole densities across the study area and variable snowshoe hare abundance. Low prey density may be affecting current abundance of predator species.

7. COMPLETING THE STUDY

7.1. Proposed Methodologies and Modifications

To complete this study, AEA will implement the methods in the Study Plan except as described in Section 7.1.2. These activities include:

- Collect scat samples for genetic identification of coyotes and foxes (RSP Section 10.10.4.1);
- Collect hair samples for genetic identification of lynx and marten (RSP Section 10.10.4.1);
- Conduct laboratory analyses of genetic samples (RSP Section 10.10.4.2);
- Conduct aerial surveys of terrestrial furbearer tracks and analyses of habitat use (RSP Section 10.10.4.3); and
- Conduct prey population index surveys (snowshoe hare pellet counts and vole abundance estimates) (RSP Section 10.10.4.1).

7.1.1. Decision Points from Study Plan

There were no decision points in the FERC-approved Study Plan to be evaluated for this study following the completion of 2013 work.

7.1.2. Modifications to the Study Plan

As described in the ISR Overview and depicted in Figure 1, AEA has added the Denali East Option road and transmission corridor to the study area. With regard to this study, the modified study area showing the Denali East Option is depicted in Figure 7.1-1. The addition of the Denali East Corridor Option does not affect survey locations for this study. Winter field surveys were completed before this new corridor option was added, and summer 2014 prey survey locations will remain consistent with the established locations from 2013. Portions of the Denali East corridor have been sampled by some of the existing furbearer and prey survey locations, so information will be available for this new corridor option.

The second winter season of field sampling was conducted from January through March 2014, and included collection of genetic samples (scats and hair) and completion of track surveys, as described in RSP Section 10.10.4.1. The variances described in Section 4.1.1 of Part A of this ISR were continued, except for the use of motion-sensing cameras, which was dropped because it did not produce useful information in 2013 (see Section 4.3.1 in Part A of this ISR). The major change implemented in the winter 2014 field season was to include marten surveys as originally described in RSP Section 10.10.4.1. Because marten home ranges are small and a comprehensive survey of the entire study area would be impractical, the marten survey was restricted to heavily forested areas near the inundation zone that were on accessible lands (no access to CIRWG lands was possible in winter 2014, as was the case in winter 2013). The study team surveyed an area of approximately 125 square kilometers (48.3 square miles) north of the proposed Watana dam site

in winter 2014. This marten survey area was divided into 25 5-square-kilometer (1.9-square-mile) blocks, roughly corresponding in size to the home range of female martens reported in the study area during the APA Project studies in the 1980s (3–6 square kilometers [1.2–2.3 square miles]).

The procedural variances from 2013 (discussed in Section 4.1.1) were continued in the second winter of study in 2014. Alterations made in the design of the lynx surveys in 2013 remained in place in 2014. The north side of the Susitna River was the primary zone for winter survey work. A change in base camp locations in 2014 improved the study team's ability to travel throughout the study area; however, areas south of the river remained inaccessible by snowmachine. The study team extended track transects farther west in winter 2014 to sample more of the study area downstream of the dam site. The results of the 2014 winter field work will be analyzed and reported in detail in the Updated Study Report (USR).

Although logistical difficulties made it impossible to survey the entire study area proposed in the Study Plan (RSP Section 10.10.3), the study team will use results from accessible areas to extrapolate analytical results across the inaccessible areas. This extrapolation will be based on habitat classifications and will be conducted using GIS, for inclusion in the USR.

7.2. Schedule

In general, the schedule for completing the FERC-approved Study Plan is dependent upon several factors, including Project funding levels authorized by the Alaska State Legislature, availability of required data inputs from one individual study to another, unexpected weather delays, the short duration of the summer field season in Alaska, and other events outside the reasonable control of AEA. For these reasons, the Study Plan implementation schedule is subject to change, although at this time AEA expects to complete the FERC-approved Study Plan through the filing of the USR by February 1, 2016, in accordance with the ILP schedule issued by FERC on January 28, 2014.

With regard to this specific study, AEA plans to complete all remaining data collection during the 2014 study season. The second winter season of field sampling was conducted during January–March 2014 to collect genetic samples and conduct track surveys, as described in RSP Section 10.10.4.1. The variances described in this ISR (Sections 4.1.1 and 4.3.1) will be continued, except for the use of motion-sensing cameras. Genetic analysis will be conducted during 2014, as described in RSP Section 10.10.4.2. Snowshoe hare pellet counts and vole density estimates will be completed during July 2014, as described in RSP Section 10.4.1.1, while continuing to incorporate the variances described in this ISR (Section 4.1.1). Final data analyses and report preparation will occur through 2015, which will be reported in the USR.

7.3. Conclusion

Implementation of the Terrestrial Furbearer Abundance and Habitat Use Study is planned for 2014. The study team expects that the combination of study results from 2013 (including the variances described in Section 4 of this ISR), the results from 2014 (including the modifications described in Section 7.1.2 above), and integration with other studies will achieve the approved Study Plan objectives. This study is interrelated with the Evaluation of Wildlife Habitat Use

Study (Study 10.19). AEA expects the approved Study Plan objectives for both this study and Study 10.19 will be achieved with the modifications to this study, as these modifications will ensure consistency in methods and are expected to result in improved data collection. The results of this study will be reported in the USR.

7.4. Figures

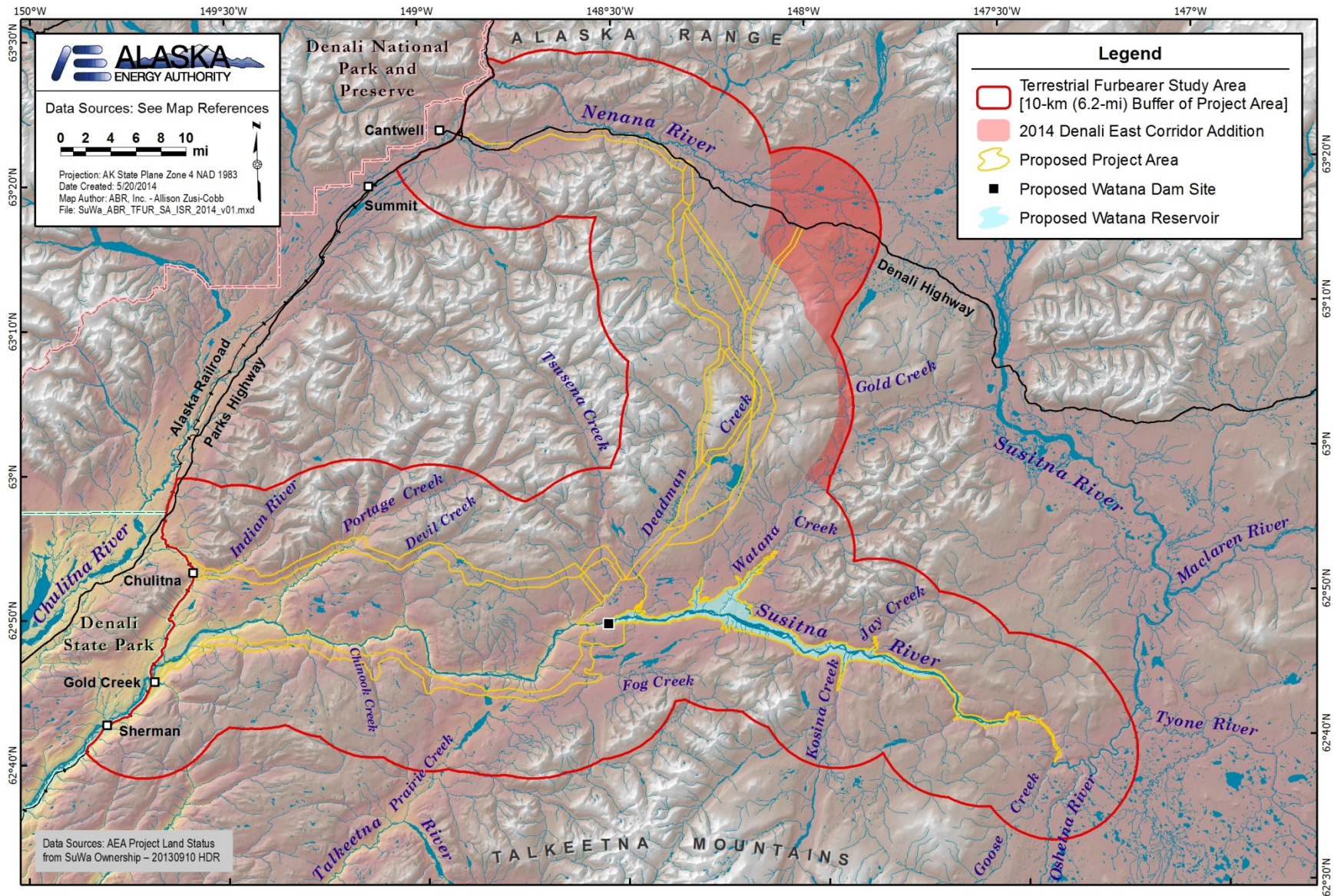


Figure 7.1-1. Revised study area for terrestrial furbearers showing Denali East Corridor Option added in 2014