

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

**Bat Distribution and Habitat Use
Study Plan Section 10.13**

**Part D: Supplemental Information to
June 2014 Initial Study Report**

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

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1. INTRODUCTION

Section 1 (Part A) of the June 2014 ISR for Bat Distribution and Habitat Use (Study Plan 10.13) details the development of this study from the Revised Study Plan (RSP) in 2012 through the end of the 2013 study season. Section 7 of ISR 10.13 (Part C), filed in June 2014, sets forth AEA's plan and schedule, at that time, for completing this study and meeting the objectives of the RSP.

As detailed in Section 2.2 of the ISR Part D Overview, various circumstances have required AEA to extend the original timeframe for completing the Commission-approved Study Plan. AEA has completed Study 10.13 since the filing of the ISR in June 2014. As detailed below, AEA's recent activities for Study 10.13 have consisted of the following:

- On October 21, 2014, AEA held an ISR meeting for the Wildlife and Botanical studies.
- In 2014, the study team conducted a second year of acoustic monitoring at 10 locations.
- Also in 2014, the study team conducted a bat capture and radio telemetry effort during the summer and fall seasons.
- The study team completed the Study Completion Report in October 2015.

The primary purpose of this Part D Supplemental Information to the ISR is to report on the implementation of the Study Plan from the filing of the ISR in June 2014 through the filing of this ISR Part D. In light of this additional implementation, AEA has now completed Study 10.13 in a manner that meets the objectives of the Commission-approved Study Plan.

2. BACKGROUND

2.1. Purpose of Study

The goal of the study is to collect baseline data on bats in the Project area to enable the assessment of potential impacts on bats from development of the proposed Project.

The study objectives are established in RSP Section 10.13.1:

- Assess the occurrence of bats and the distribution of habitats used by bats within the proposed reservoir inundation zone and associated infrastructure areas for the Project.
- Review geological and topographical data to assess the potential for roosting, maternity, and hibernacula sites in the study area.
- Examine suitable geological features (caves, crevices) and human-made structures (buildings, mines, bridges) for potential use by bats as roosting sites, maternity colonies, and hibernacula.

2.2. Study Components

The study has two major components:

- Assess the occurrence of bats and the distribution of habitats used by bats in the study area, using acoustic monitoring; and
- Identify potential roosting locations of bats in the study area through literature review and conduct ground-based searches to locate roosts of bats in the study area.

3. STATUS, HIGHLIGHTED RESULTS, AND ACHIEVEMENTS

The following tasks were completed in 2013 and reported in Part A of the June 2014 ISR for Study 10.13:

- Using ultrasonic detectors, the study team conducted acoustic surveys from May to October 2013 in 20 locations. At each location, the study team positioned the detector and oriented the microphone to maximize the probability of recording echolocation call sequences (bat passes), based on the specific characteristics of the site.
- The study team used a variety of literature-based and field methods to assess the occurrence of natural structures (caves, cliffs, trees) and their suitability as roost sites, maternity colonies, or hibernacula in the study area. The study team conducted an aerial survey by helicopter to examine potential roosting habitats in cliffs and other rock structures. The team also conducted ground searches of potentially suitable tree roosts.
- The study team utilized a combination of office-based and field methods to evaluate human-made structures (buildings, mines, bridges) as roost sites, maternity colonies, and hibernacula in the study area. During August 2013, the study team examined 25 structures at 11 sites for the presence of bats and any signs of use as roost sites or maternity colonies. All of these structures were re-surveyed in October 2013.
- To maintain quality assurance and quality control, acoustic monitoring equipment was checked and data cards were downloaded into a database at approximately 2-week intervals.

The study team has completed the following activities for Study 10.13 since the June 2014 filing of the ISR:

- The study team conducted a second year of acoustic monitoring to assess bat distribution and habitat use at 10 locations, including four not sampled in 2013.
- The study team conducted a mist-netting effort to capture bats for radio-tagging and tracking during the summer and fall seasons to locate bat roost sites in the study area.

4. SUMMARY OF STUDY 10.13 DOCUMENTS

Since filing of the RSP in 2012, AEA and FERC have prepared several documents pertaining to this study. To aid review by FERC staff and licensing participants, each of these documents is listed below. Each of these documents is accessible on AEA's Project licensing website (<http://www.susitna-watanahydro.org/type/documents/>) by clicking on the entry in the "Link" column in the table. In addition, these documents are available on FERC's eLibrary system (<http://www.ferc.gov/docs-filing/elibrary.asp>), in Docket No. P-14241.

Title	Date	Description	Link
10.13. Bat Distribution and Habitat Use (Revised Study Plan)	12/14/2012	This document presents the plan for this study, including goals, objectives, the study area, and proposed study methods for bats.	RSP for Study 10.13
FERC Study Plan Determination for Study 10.13	2/1/2013	This document presents FERC approval of Study 10.13, which approved AEA's Revised Study Plan with no recommended changes.	FERC SPD for Study 10.13
Draft Initial Study Report for Study 10.13	2/3/2014	This draft of the ISR summarized the study methods and variances during the 2013 study season, and presented preliminary data collected for Study 10.13. This draft ISR was later republished as Part A of the final ISR.	Draft ISR for Study 10.13
Initial Study Report for Study 10.13	6/3/2014	This document is the Initial Study Report (Parts A, B and C) for Study 10.13. Part A republishes the Draft ISR. Part B identifies supplemental information and errata in Part A. Part C presents study modifications and plans for completing the study.	ISR Part A for Study 10.13 ISR Part B for Study 10.13 ISR Part C for Study 10.13
Initial Study Report Meetings, October 21, 2014	11/15/2014	Transcripts and AEA's agenda and Powerpoint presentations for the ISR meeting concerning the Project wildlife studies	Transcripts from ISR Meeting Materials from ISR Meeting
Bat Distribution and Habitat Use Study (10.13) – Study Completion Report	11/4/2015	Study Completion Report; a summary of field results in 2013–2014.	2013-2014 SCR for Study 10.13

5. NEW STUDY DOCUMENTATION SUPPLEMENTING THE ISR

The following table identifies and describes additional reports and other documents that update, refine, or otherwise supplement certain sections of the ISR pertaining to this Study 10.13, during AEA's continued implementation of the Study Plan since the ISR was filed in June 2014.

ISR Reference	Description
Part A, Section 4	This Section is updated and supplemented by the Study Completion Report Section 4, describing 2013–2014 Study Plan implementation.
Part A, Section 5	This Section is updated and supplemented by the Study Completion Report Section 5.

6. VARIANCES

6.1. 2013 Study Season

The following variances are reported in the June 2014 ISR:

- Acoustic monitoring and ground-based roost searches could not be conducted as planned on Cook Inlet Regional Working Group (CIRWG) lands due to lack of access in 2013 (RSP Section 10.13.4.1).
- The search effort for artificial roosts (RSP Section 10.13.4.1) was expanded to include nearby buildings outside of the study area due to the scarcity of suitable roosting structures within the study area where permission was granted by property owners.

6.2. 2014 Study Season

As noted in Section 4 of the Study Completion Report for this study, the following variances occurred when implementing this study in 2014:

- The study team rectified the omission of acoustic-monitoring sites on CIRWG lands in 2013 by establishing four monitoring stations on CIRWG lands in the study area in 2014.
- In addition, as described in ISR 10.13, Part C, Section 7.1.2, six acoustic-monitoring sites from 2013 were resampled to better understand annual variation and to monitor areas in which high rates of bat detections were recorded in 2013, to assist in targeting the mist-netting and telemetry effort in 2014.
- In 2014, field effort was devoted to the targeted mist-netting and telemetry effort designed to locate specific bat roosts, which was added as a study plan modification for the second year of field surveys, as described in ISR 10.13, Part C, Section 7.1.2.

7. STUDY PLAN MODIFICATIONS

7.1. Modifications Identified in ISR

Section 7.1.2 of ISR 10.13 (Part C) details modifications for this study following the 2013 study season. These modifications are generally summarized as follows:

- AEA implemented a modification to the Study Plan, which involved the use of mist nets for bat capture and the use of radio telemetry to locate bat roosts in the study area during the spring and fall seasons. Using telemetry, the study team could specifically identify roosting locations of radio-tagged bats in the study area, accomplishing Study Plan objectives.

- In addition, AEA conducted acoustic monitoring in 2014 by using six detectors deployed at sites with the highest rates of detection in 2013 and four detectors on CIRWG lands, which were not sampled in 2013.

7.2. Modifications Identified since the June 2014 ISR

As detailed in the Study Completion Report for this study, AEA plans no modifications of the methods for this study, as this study is now complete.

8. STEPS TO COMPLETE THE STUDY

The field work, data collection, data analysis, and reporting for this study successfully met all study objectives in the FERC-approved Study Plan. In light of the results, variances, and modifications described above, AEA has completed this study.