

# Susitna-Watana Hydroelectric Project Document

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

**Distribution, Abundance, and Habitat Use by  
Large Carnivores  
Study Plan Section 10.8**

**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

Alaska Department of Fish & Game

Anchorage and Palmer, Alaska

and

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Fairbanks and Anchorage, Alaska

June 2014

## TABLE OF CONTENTS

<b>Executive Summary .....</b>	<b>ii</b>
<b>7.     Completing the Study .....</b>	<b>1</b>
7.1.    Proposed Methodologies and Modifications .....	1
7.1.1.        Decision Points from Study Plan .....	1
7.1.2.        Modifications to Study Plan.....	1
7.2.    Schedule .....	1
7.3.    Conclusion .....	2

## EXECUTIVE SUMMARY

Study of Distribution, Abundance, and Habitat Use by Large Carnivores 10.8	
Purpose	The goal of this study is to obtain sufficient information to evaluate potential Project-related effects on brown bears, black bears, and wolves. Four primary objectives were identified in RSP Section 10.8.1: (1) Estimate the current populations of brown bears, black bears, and wolves in the study area, using existing data from ADF&G; (2) Evaluate bear use of streams supporting spawning by anadromous fishes in habitats downstream of the proposed dam that may be altered by the Project; (3) Describe the seasonal distribution of, and habitat use by, wolves in the study area using existing data from ADF&G; and (4) Synthesize historical and current data on bear movements and seasonal habitat use in the study area, including the substantial body of data gathered by radio-tracking during the 1980s.
Status	Population density modeling for brown and black bears was developed by ADF&G using existing survey data from 2000, 2001, and 2003. Field surveys of bear use of salmon-spawning streams were conducted in the Middle Susitna River Segment and its tributaries in 2013, focusing on collection of bear hair samples for analyses of DNA and stable isotopes. ADF&G data on wolves were reviewed and synthesized. Analysis of DNA and stable isotope samples was not completed as of the February 2014 draft ISR, but is now complete and reported in Part B of the ISR for this study.
Study Components	Existing data from distance-sampling surveys were used to generate population density models and population estimates for brown and black bears in the study area. DNA analysis of bear hairs snagged by nonlethal, modified snares set along salmon-spawning streams was conducted to assess the minimum number of bears using those streams and to characterize the diet of bears using those areas. Ongoing monitoring of and historical data on wolves was reviewed to provide background information for assessing potential Project-related impacts on the species.
2013 Variances	Researchers were unable to access some anadromous streams on Cook Inlet Regional Working Group (CIRWG), Alaska Railroad Corporation (ARRC), and some private lands because land access permits were not available in 2013. Therefore, some documented salmon-spawning sites in the Middle Segment of the Susitna River were inaccessible, including all portions of the Middle Segment upstream of PRM 146.5. These limitations on spatial coverage of hair sampling limited the study team's ability to estimate the minimum population size of bears using those spawning streams, as proposed in RSP Section 10.8.4.1.2.
Steps to Complete the	No modifications are needed to complete this study and meet Study Plan objectives. AEA plans to finalize this study in 2014 and 2015 by completing the following methods, as described in RSP Section 10.8.4: (1) obtain samples

Study of Distribution, Abundance, and Habitat Use by Large Carnivores 10.8	
Study	of bear hairs in salmon spawning areas in the Middle Susitna River for analysis of DNA to generate a minimum population estimate and stable isotopes to estimate diet of bears using the spawning areas (completed in 2014 and reported in Part B of this ISR), and (2) obtain and synthesize additional data on wolves in the study area.
Highlighted Results and Achievements	ADF&G researchers observed 373 black bear groups and 153 brown bear groups during aerial surveys in the study area in 2000, 2001, and 2003. Using a density surface model (DSM), the study team estimated a total of 1,262 black bears and 841 brown bears in the study area. Fifty-two bear-hair snags were deployed in 12 sampling locations (average = 49.8 days each) during July 22–September 25, 2013. The snags collected a total of 96 hair samples for analyses of DNA and stable isotopes.

## **7. COMPLETING THE STUDY**

### **7.1. Proposed Methodologies and Modifications**

To complete this study, AEA will implement the methods in the Study Plan, with no modifications. These activities include the following:

- Obtain samples of bear hairs in salmon spawning areas in the Middle Susitna River for analysis of DNA to generate a minimum population estimate and stable isotopes to estimate diet of bears using the spawning areas (RSP Section 10.8.4.1.2); and
- Obtain and synthesize additional data on wolves in the study area (RSP Section 10.8.4.2).

The analysis of bear survey data (RSP Section 10.8.4.1.1) was completed in 2013 and that objective has been met, so no further work will be done on bear population estimation.

Laboratory results for DNA and stable isotope analyses of bear hair samples collected from nonlethal snares deployed in the downstream bear survey (RSP Section 10.8.4.1.2) were completed after filing of the Draft ISR (February 2014) and are described in Part B of this ISR.

#### **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 the 2013 work.

#### **7.1.2. Modifications to Study Plan**

No modifications to the Study Plan are needed to complete the study and meet the Study Plan objectives.

### **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 Updated Study Report (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 is not proposing any additional efforts under this study in 2014. AEA plans to complete all remaining data collection and analysis for this study in 2015, which will be reported in the USR.

### **7.3. Conclusion**

Implementation of the Distribution, Abundance, and Habitat Use by Large Carnivores Study is planned for 2015, with no modification of the FERC-approved Study Plan. 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 fully achieved, as AEA proposes no modifications to this study. The results of this study will be reported in the USR.