

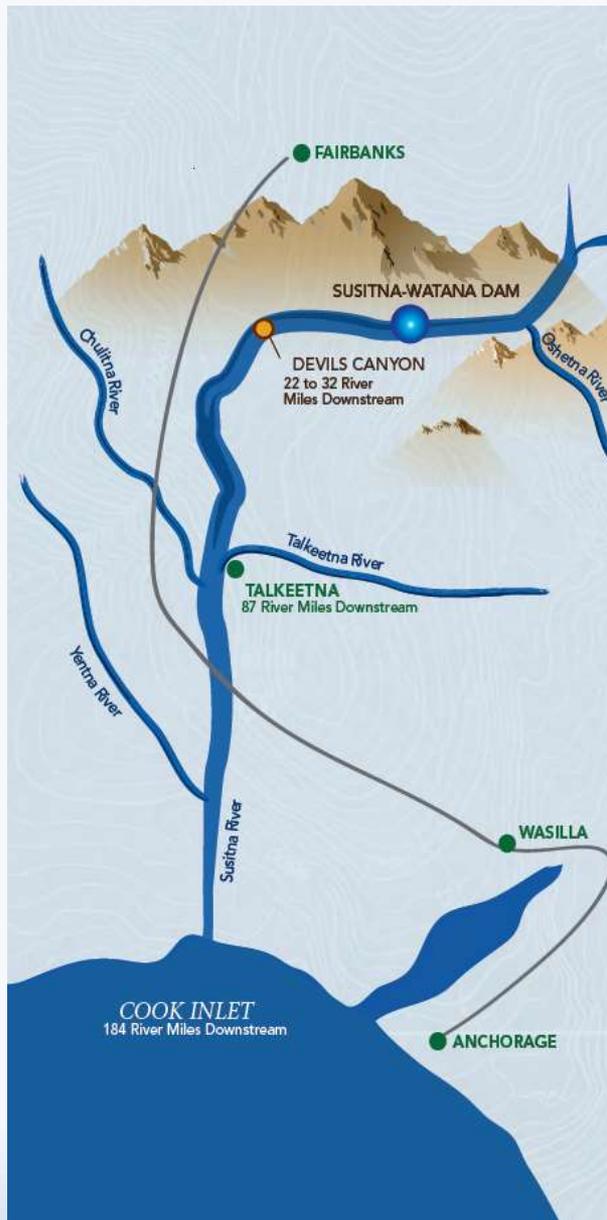
Initial Study Report Meeting

Study 10.11 Aquatic Furbearer Abundance and Habitat Use

March 29, 2016

Prepared by

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& Services



Study 10.11 Status

ISR documents (ISR Part D Overview):

- Initial Study Report: Parts A, B and C (June 3, 2014)
- 2014–2015 Study Implementation Report (SIR) (November 4, 2015)

Status:

- Both years of beaver lodge surveys have been completed.
- One year of track surveys for river otters and mink has been completed; the second year of track surveys is planned for winter 2016.
- Muskrat pushup surveys are planned for spring 2016.

Study 10.11 Objectives

- Delineate the distribution and estimate the current population size of beavers.
- Describe the distribution and relative abundance of river otters, mink, and muskrats.
- Describe habitat associations of aquatic furbearers.
- Review available information on food habits and diets of piscivorous furbearers (river otter and mink) as background for the pathways analysis for Study 5.7 (Mercury Assessment and Potential for Bioaccumulation).
- Collect hair samples from river otters and mink to characterize baseline tissue levels of mercury for Study 5.7 (Mercury Assessment and Potential for Bioaccumulation).

Study 10.11 Components

- **Beaver and Muskrat Surveys** (ISR Part A, Section 4.1, pg 2)
 - Aerial surveys of beaver colonies in fall and spring.
 - Aerial survey of muskrat “pushups” in spring.
- **River Otter and Mink Surveys** (ISR Part A, Section 4.2, pg 3)
 - Aerial surveys of tracks in winter.
- **Information for Mercury Assessment** (ISR Part A, Section 4.3, pg 4; this component was moved to the Mercury Study [Study 5.7], ISR Part C, Section 7.1.2)
 - Literature review of food habits and diets of river otter and mink.
 - Hair sampling of river otter and mink for mercury analysis.

Study 10.11 Variances

- **Aerial surveys for beaver were broadened** to include areas outside the study area (see RSP Sections 10.11.3 and 10.11.4.1), to cover the entire riverine physiography area delineated for Study 11.6 (Riparian Vegetation Study Downstream of the Proposed Susitna–Watana Dam), thereby providing more data than would have been collected otherwise. (ISR Part A, Section 4.1.1; SIR Section 4)
- The planned **survey of muskrat pushups (RSP Section 10.11.4.1) was not conducted in 2013**, because of the unusually late spring and persistent snow and ice cover, or in **2014**; instead, researchers conducting surveys for Study 10.15 (Waterbird Migration, Breeding, and Habitat Use) and Study 10.14 (Surveys of Eagles and Other Raptors) in May 2013 and 2014 recorded the presence of muskrat pushups. (ISR Part A, Section 4.1.1; SIR Section 4)

Study 10.11 Variances

- **Track surveys for river otters and mink were not conducted** in February–early April 2013 (RSP Section 10.11.4.1) or in November/December 2013 due to the lack of a suitable weather window in relation to pilot and aircraft availability. Incidental observations of river otters and river otter tracks were compiled from surveys conducted for other Project studies, however, to help meet the study objective. (ISR Part A, Section 4.2.1)
- **The study area changed when the Chulitna Corridor was eliminated from further consideration and the Denali East Option was added.** (ISR Part D Overview, Section 1.3)
- **The objectives and methods in this study related to mercury analysis, including the literature review of food habits and diets of river otters and mink and the collection of hair samples, have been consolidated under Study 5.7 (Mercury Assessment and Potential for Bioaccumulation).** (ISR Part C, Section 7.1.2)

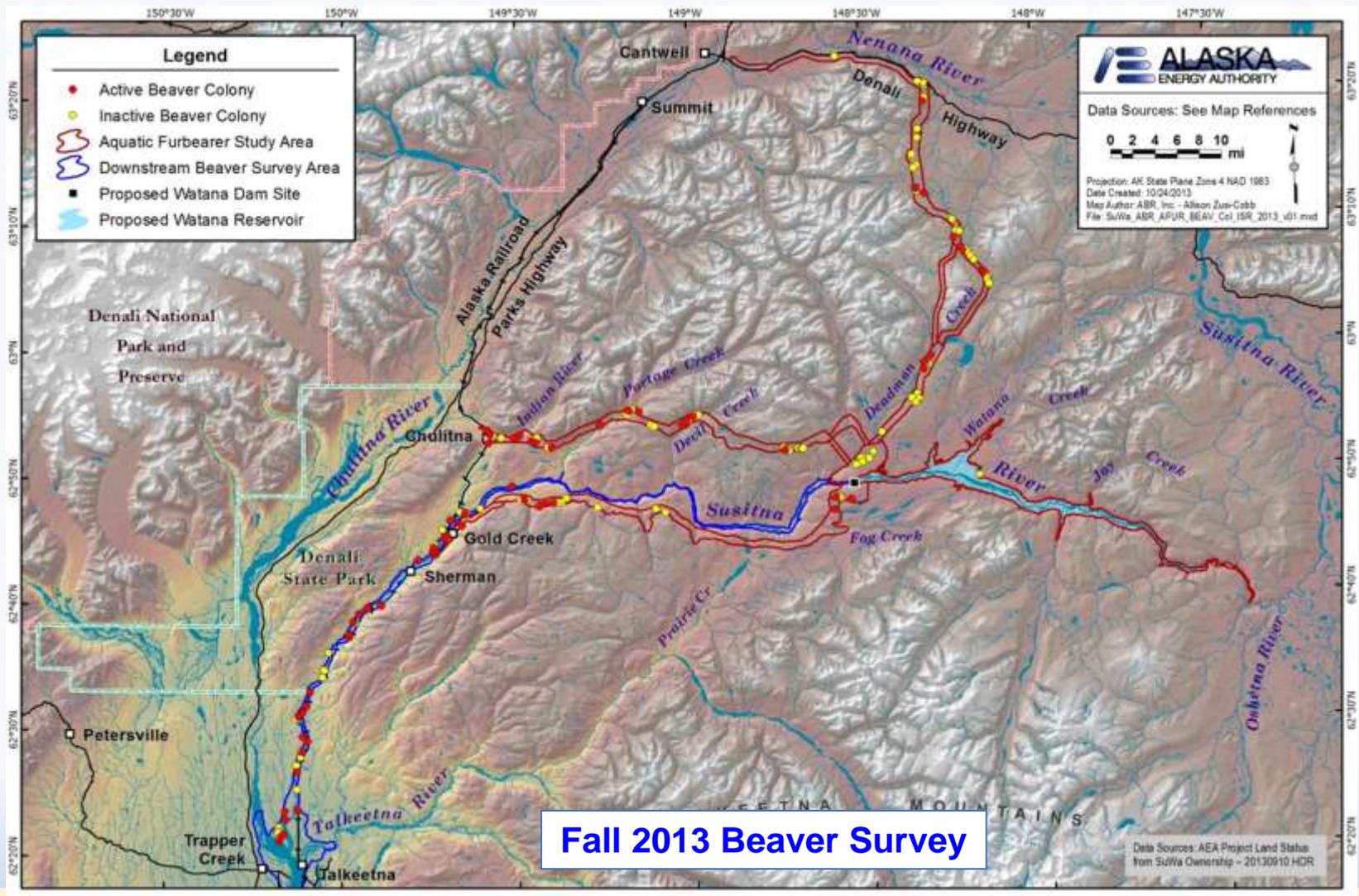
Study 10.11: Summary of Results in ISR

(ISR Part A, Section 5)

- In early October 2013, 184 beaver colonies were observed in the survey area and 37.5% were determined to be active, based on the presence of fresh food caches near lodges.
- The study team compiled 60 incidental observations of river otters or river otter tracks, 1 incidental observation of mink tracks, and 14 incidental observations of muskrats and muskrat pushups recorded by other Project wildlife studies in 2012–2013.
- A review of scientific literature on the food habits and diets of river otters and mink was undertaken to provide data inputs for the pathways analysis for Study 5.7 (Mercury Assessment and Potential for Bioaccumulation).

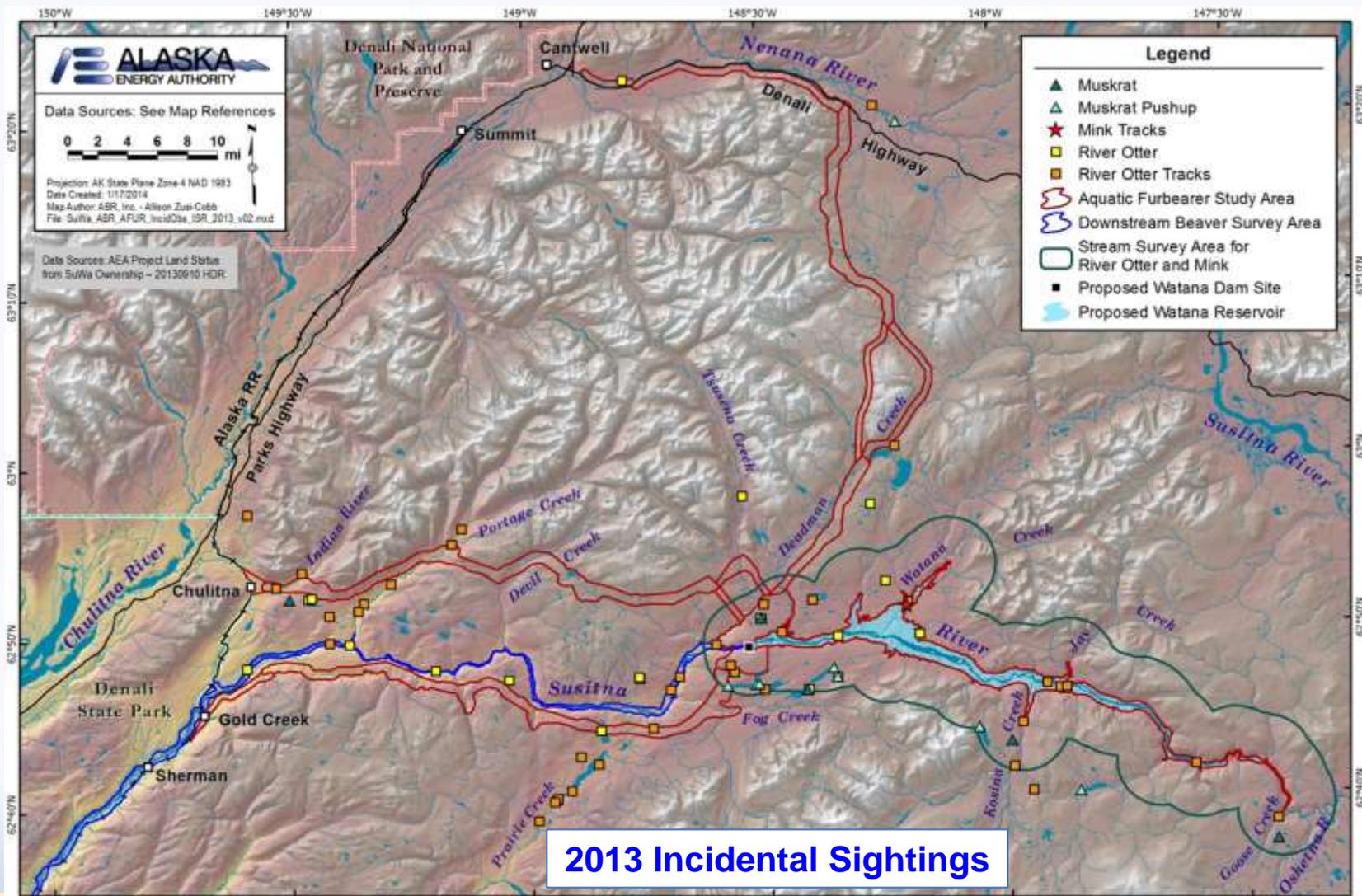
Study 10.11: Summary of Results in ISR

(ISR Part A, Section 5)



Study 10.11: Summary of Results in ISR

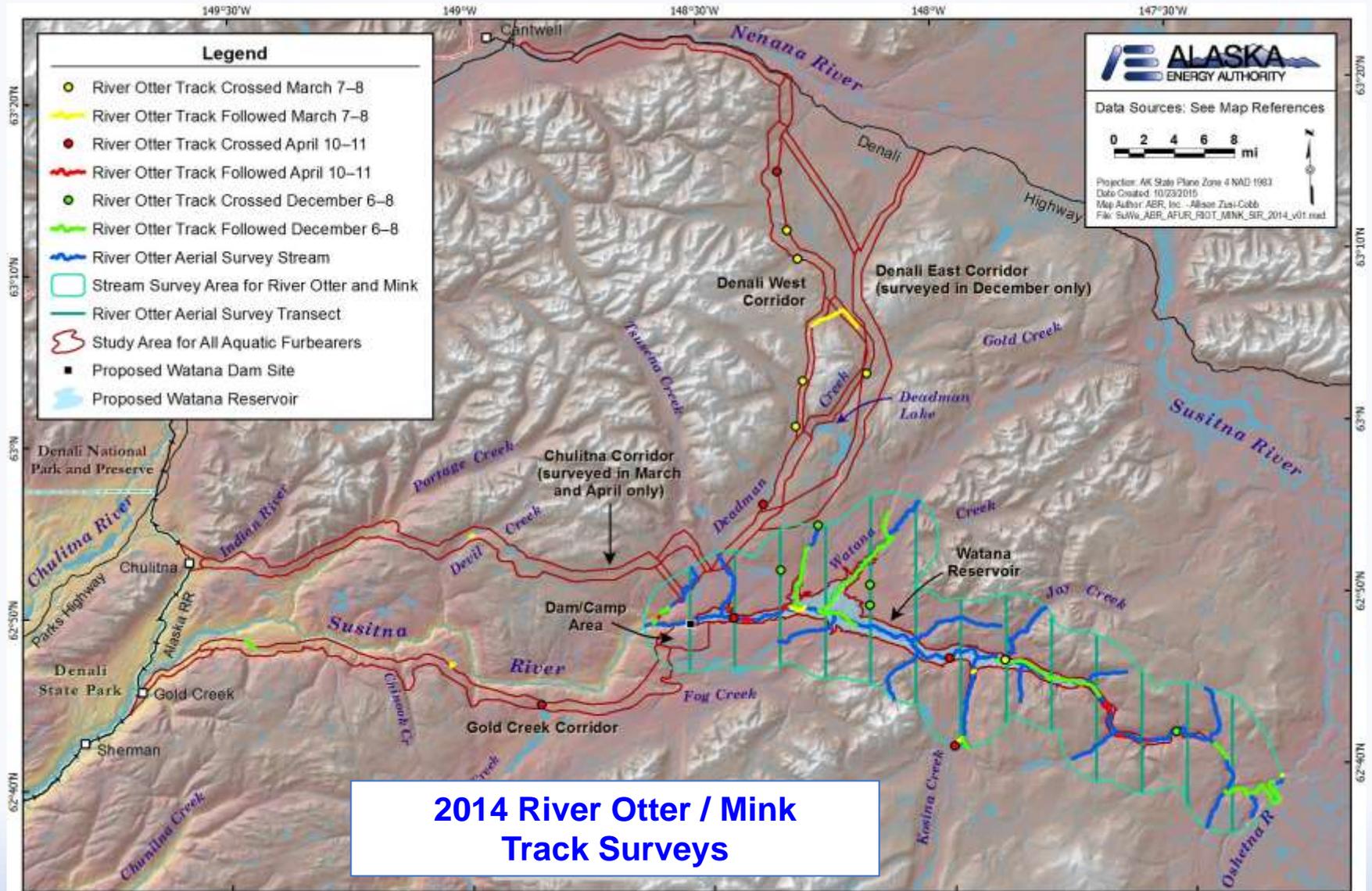
(ISR Part A, Section 5)



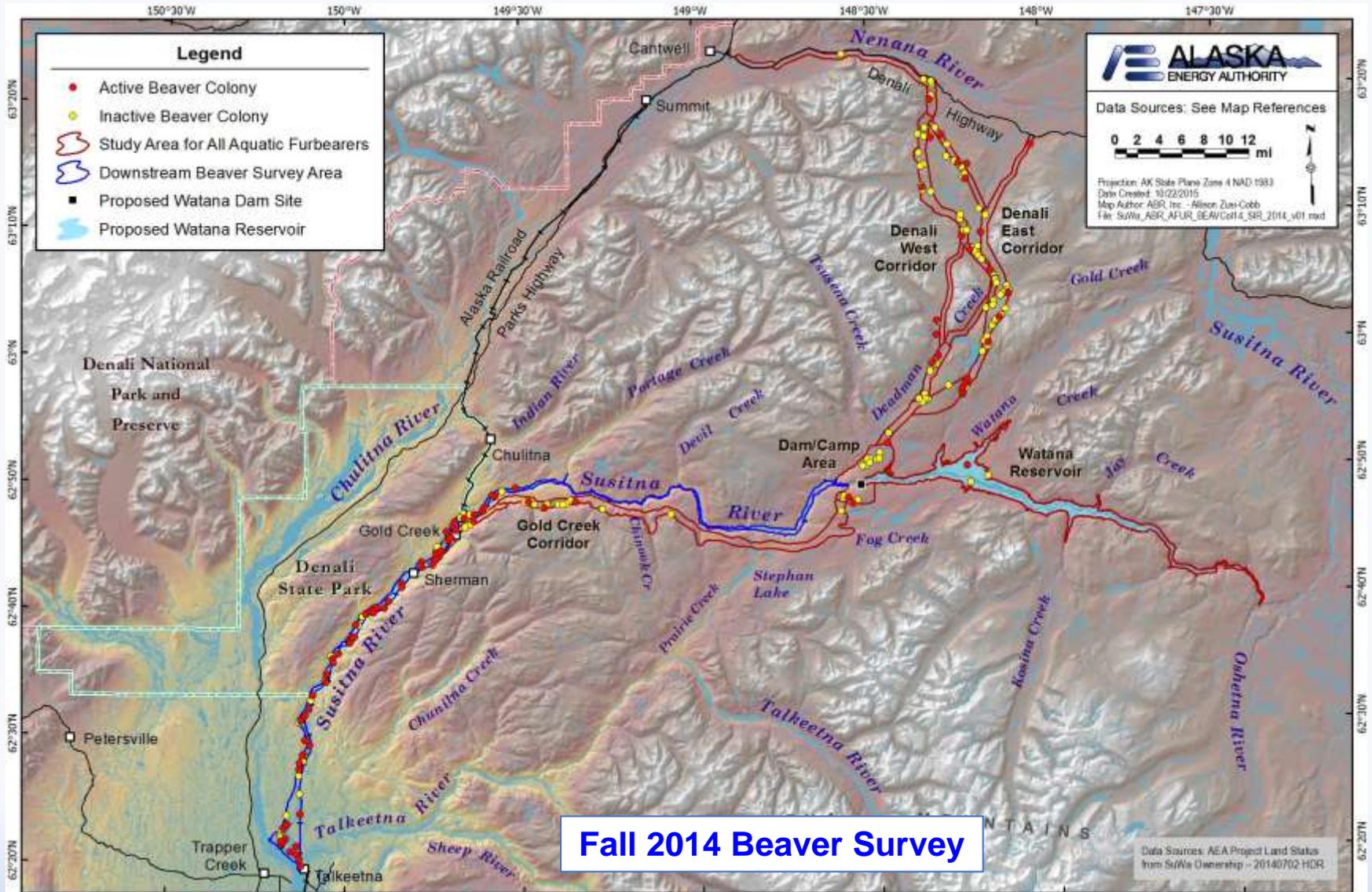
Study 10.11: Summary of Results since the ISR

- Track surveys for river otter and mink were conducted on March 7–8, April 10–11, and December 6–8, 2014. (SIR Section 5.2.2)
- An aerial survey was conducted on May 2, 2014, to assess overwinter survival of 53 beaver lodges that were judged to be active in fall 2013, producing a minimum estimate of 33% survival over the winter (survival probably was higher, in view of poor survey conditions). (SIR Section 5.1)
- An aerial survey of beaver lodges conducted September 26–27 and October 8–9, 2014, found 250 total lodges, including 82 beaver lodges judged to be active. (SIR Section 5.1)
- Aerial surveys were conducted on April 29 and May 17, 2015, to assess overwinter survival of the 82 beaver lodges that were judged to be active in fall 2014, producing a minimum estimate of 69.5% survival over the winter. (SIR Section 5.1)
- The study team compiled 21 additional incidental observations of river otters and river otter tracks and 6 incidental observations of muskrats and muskrat pushups recorded by other Project wildlife studies in 2014. (SIR Sections 5.1 and 5.2.1)
- Eight modified, nonlethal, single-catch snares were deployed at 2 locations in March–April 2014 to obtain hair samples from river otters. A single sample of 4 hairs was collected at Kosina Creek for analysis of mercury content (see Study 5.7). (SIR Sections 4.3 and 5.3)

Study 10.11: Results since the ISR (SIR Figure 5.2-1)

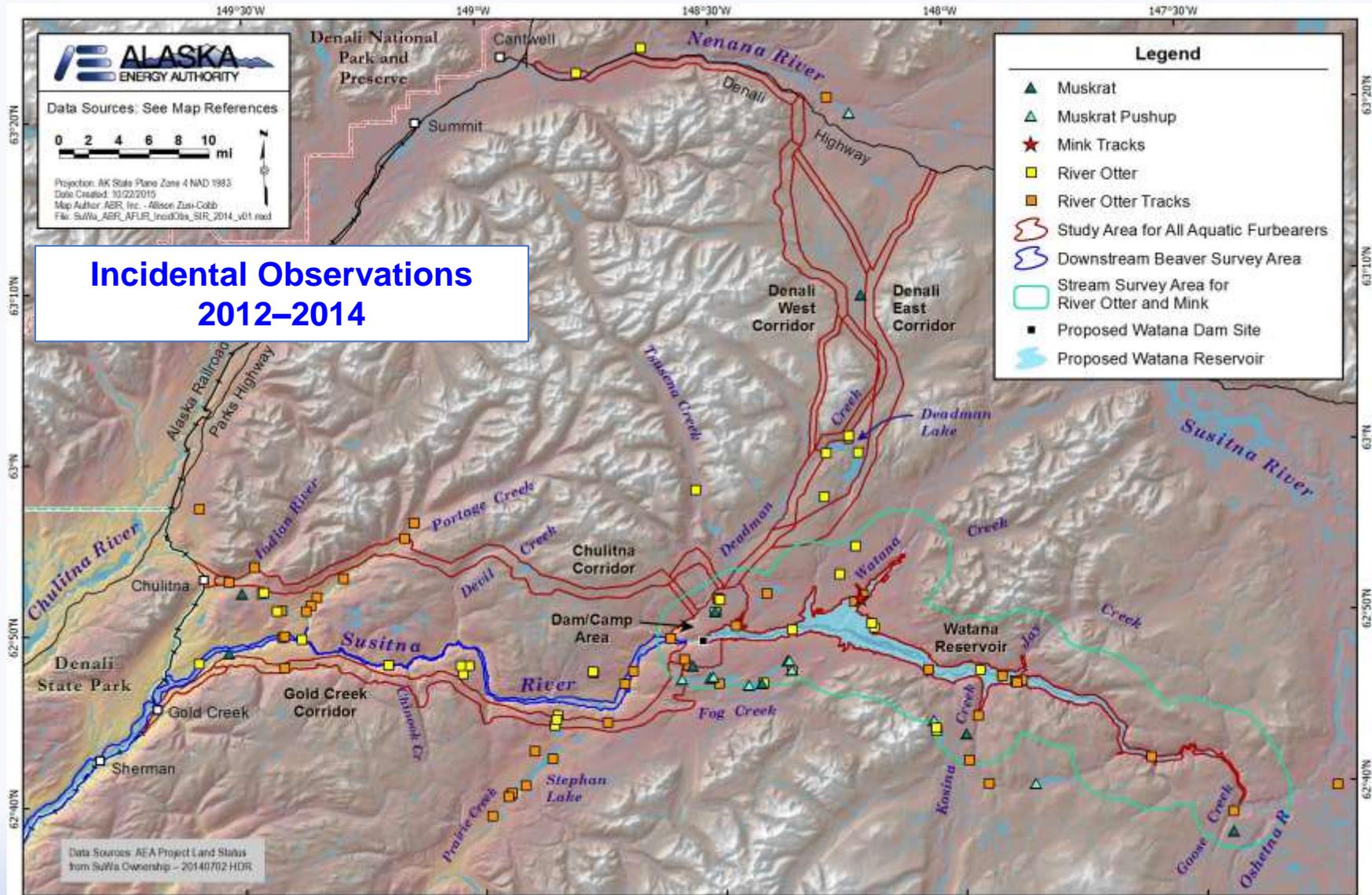


Study 10.11: Results since the ISR (SIR Figure 5.1-2)



Fall 2014 Beaver Survey

Study 10.11: Results since the ISR (SIR Figure 5.1-3)



AEA Proposed Modifications to Study 10.11

- The Chulitna Corridor has been removed from the study area. (ISR Part D Overview, Section 1.3)
- AEA added the Denali East Option (access road and transmission corridor) to the study area. (ISR Part C, Section 7.1.2)
- AEA proposes to substitute the two seasons of incidental observations of muskrats obtained in 2013 and 2014 in place of the first year of muskrat pushup surveys. The muskrat pushup surveys planned for spring 2016 thus will constitute the second year of those surveys, fulfilling the study plan objective (RSP Section 10.11.4.1). (ISR Part D, Section 7.2)

AEA Proposed Modifications to Study 10.11

- The objectives and methods in this study related to mercury analysis, including the literature review of food habits and diets of river otters and mink and the collection of hair samples, have been consolidated under Study 5.7 (Mercury Assessment and Potential for Bioaccumulation). (ISR Part C, Section 7.1.2)

Steps to Complete Study 10.11

- Complete second year of river otter and mink track surveys along stream courses and transects during winter 2016 (RSP Section 10.11.4.2).
- Survey muskrat pushups in water bodies and wetlands throughout the Project area during spring 2016 (RSP Section 10.11.4.1).
- Cumulative data analyses will be completed and reported in the USR.

Licensing Participants' Comments and Proposed Modifications to Study 10.11?

- Agencies
- CIRWG members and Ahtna
- Public

