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Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Invasive Plant Study
Study Plan Section 11.9

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

ABR, Inc.—Environmental Research & Services

June 2014

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EXECUTIVE SUMMARY

Invasive Plant Study 11.9	
Purpose	The purposes of this study are to determine the current prevalence of invasive vascular plants in the Project area and nearby disturbed areas and to assess the risk of the continued spread of invasive species as a result of Project development.
Status	The study was initiated in 2013; a field survey was conducted August 19–28, 2013. Fieldwork will continue in 2015 to survey remote locations, portions of the Alaska Railroad right-of-way, and Project material source locations, if identified.
Study Components	(1) Review the Alaska Exotic Plants Information Clearinghouse (AKEPIC) database and current aerial imagery to identify locations of previous collections of invasive species and disturbed sites that could serve as sources of invasive species; (2) conduct field surveys in disturbed areas in and near the Project area that could serve as sources of invasive species and estimate the abundance (using percent cover and/or stem-count data) of all invasive species found; and (3) conduct an ecological risk evaluation of the invasive plant species found in and near the Project area to assess the threat that those species may pose to the native plant communities occurring in the Project area.
2013 Variances	During 2013, no variances in methodology occurred when implementing the Invasive Plant Study.
Steps to Complete the Study	The plans for completing this study include implementing the Study Components listed above in 2015 (the final field surveys will be conducted in summer 2015). No modifications to the Study Plan are proposed to achieve the study objectives; however, the study area has been changed from that described in the RSP (Section 11.9.3). As described in the ISR Overview, AEA has added the Denali East Option road and transmission line alternative corridor to the study area. The small amount of additional high-resolution aerial imagery needed to cover the expansion of the study area applicable to this study for the Denali East Option corridor will be acquired in 2014.
Highlighted Results and Achievements	A total of 28 invasive plant taxa were recorded during the field survey. The percent cover of most species was modest, with 95 percent of the cover-value observations across all 107 sites recorded as either trace (< 1%) or low (1–5%) cover. With few exceptions, populations of invasive species were confined to road rights-of-way and other sites with gravelly, well-drained substrates. Due to the negligible to small population sizes of most invasive species found during the 2013 survey, the current ecological risk of invasive plants in the vicinity of the Project area is low. Results from the 2013 field

	survey provide baseline data on the extent to which invasive plants are currently associated with portions of the George Parks Highway near the starting points of two of the three alternative road corridors for the Project (Gold Creek and Chulitna corridors), and along the Denali Highway (and associated primitive roads and off-road vehicle trails) where it is congruent with the northern portion of the Denali Corridor.

7. COMPLETING THE STUDY

7.1. Proposed Methodologies and Modifications

To complete this study, the study team will implement the methods in the Study Plan, with no modifications except as described below in Sections 7.1.1 and 7.1.2. These activities include:

- Reviewing the Alaska Exotic Plants Information Clearinghouse (AKEPIC) database and current aerial imagery to identify locations of previous collections of invasive species and disturbed sites that could serve as sources of invasive species (RSP Section 11.9.4.1) (task completed in 2013);
- Conducting field surveys in disturbed areas in and near the Project area that were not surveyed in 2013 and that could serve as sources of invasive species, and estimating the abundance (using percent cover and/or stem-count data) of all invasive species found (RSP Section 11.9.4.1); and
- Conducting an ecological risk evaluation of the invasive plant species found in and near the Project area to assess the threat that those species may pose to the native plant communities occurring in the Project area (RSP Section 11.9.4.2).

7.1.1. Decision Points from Study Plan

The RSP (Section 11.9.1) indicates that the field methods and/or study area described in the Study Plan would be updated, if necessary, based on the results of the first year of work in 2013. After a careful review of the 2013 survey work and the data collected, the study team has determined that, other than the study area modification noted below in Section 7.1.2, no additional alterations to the Study Plan are needed. The study team has not received any comments from AEA, FERC, resource agency staff, or other licensing participants indicating a need for alterations in the Study Plan

7.1.2. Modifications to Study Plan

No modifications to the Study Plan methods are needed to complete the study and meet the Study Plan objectives. However, the study area has changed from that described in the Study Plan (RSP Section 11.9.3). As described in the ISR Overview and depicted in Figure 1, AEA has added the Denali East Option road and transmission line corridor. For this study, the additional road and transmission line corridor means that additional sample sites along the Denali Highway (to the east of Brushkana Creek near where sampling ended in 2013; see Figure 3-1) will be added in 2015 to survey for invasive plant species in disturbed areas and along trails near where the new Denali East Option corridor would connect with the existing Denali Highway Figure 7.1-1).

As described for each of the alternative road and transmission line corridors in the RSP (Section 11.9.3), the study team also will evaluate the possibility of sampling additional disturbed sites (e.g., ORV trails) within the 2-mi buffer used for the Denali East Option by the Vegetation and Wildlife Habitat Mapping Study in the Upper and Middle Susitna Basin (ISR Study 11.5). The

selection of the additional disturbed areas to be surveyed in 2015 will be conducted with input from interested licensing participants and agency personnel during the Technical Working Group (TWG) meetings for the Project. However, such undeveloped trails, when far from the Denali Highway and lacking gravelly substrates, are unlikely to harbor invasive species (in 2013, most invasive plants were found primarily near the Denali Highway in gravelly areas; see Section 5 above).

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 data collection efforts under this study in 2014. Rather, AEA plans to complete the final year of field data collection in the 2015 study season. The results of the field surveys in 2013 and 2015 will be reported in the USR.

A small section of the 2-mi buffer study area used in ISR Study 11.5 for the new Denali East Option corridor, and to be evaluated for disturbed sites in this study, is not covered by current, high-resolution imagery needed for the vegetation and habitat mapping work. This imagery gap will be filled in 2014 either with existing, archived satellite imagery or a new acquisition of digital aerial photography. The study team is actively working with staff at the Geographic Information Network of Alaska (GINA) to find the best solution to fill the imagery gap.

7.3. Conclusion

The data collected in 2013 and the field survey work planned for 2015 will achieve the Study Plan objectives of documenting the locations of invasive species present at entry points into the Project area as well as at disturbed sites in the Project area, estimating current invasive species population numbers and their ecological risk, and the extent to which Project activities could influence invasive species establishment in the Project area. The modification to the study area (reduced size) for the interrelated Vegetation and Habitat Mapping Study in the Upper and Middle Susitna Basin (ISR Study 11.5) and the modifications to the field methods for the interrelated Riparian Vegetation Study Downstream of the Proposed Susitna-Watana Dam (ISR Study 11.6) will not affect this study. This is because this study depends only on the identification of disturbed sites in the Project area and any records of invasive plant species from those two interrelated studies, and that information will not be affected by the modifications to those studies.

7.4. Figures

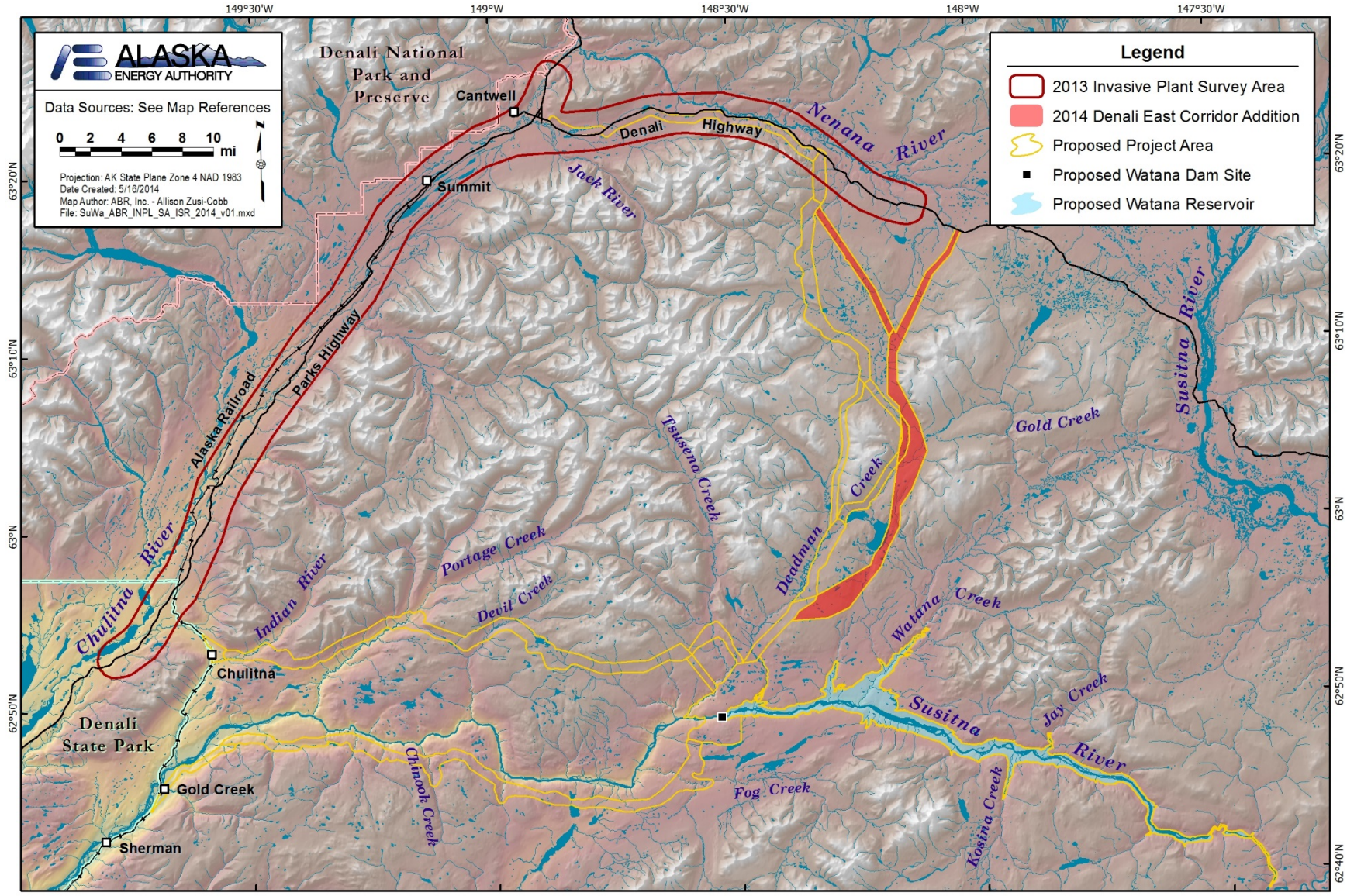

Figure 7.1-1. Invasive Plant Study Area Showing the Denali East Option Corridor Added in 2014.