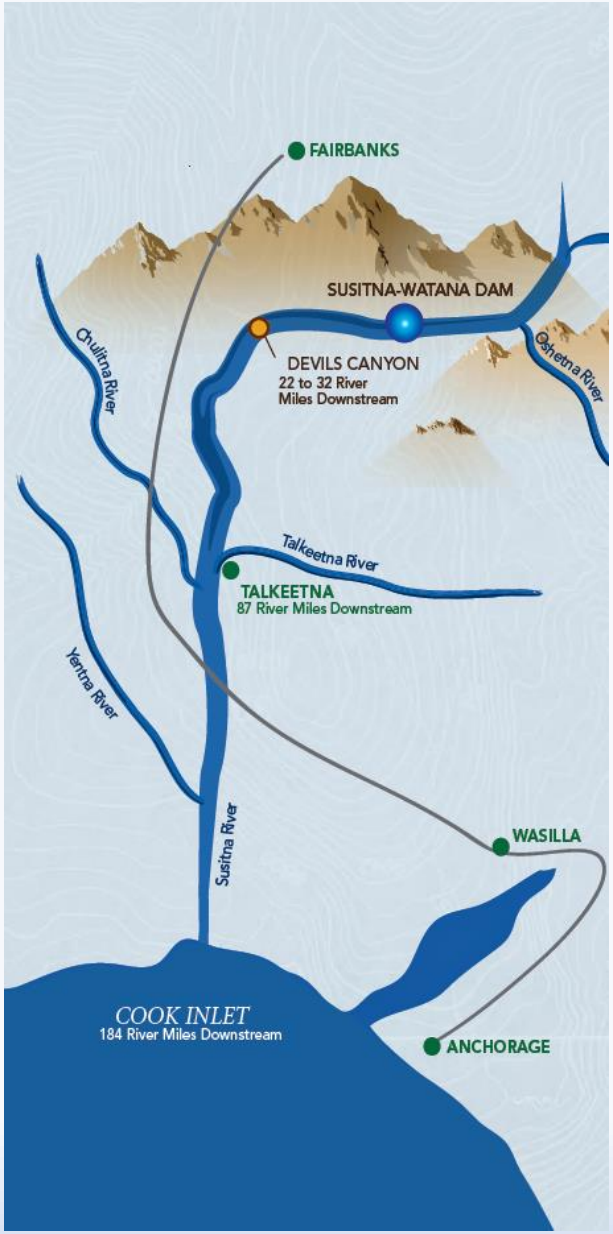


Initial Study Report Update Meeting

Study 11.9
Invasive Plant Study

March 29, 2016

Prepared by

ABR, Inc.—Environmental Research & Services

Study 11.9 Status

ISR documents (ISR Part D Overview):

- Initial Study Report: Parts A, B, and C (June 3, 2014)

Status:

- Field surveys for invasive vascular plants were completed in 2013.
- In 2013, a preliminary ecological risk assessment was conducted for the invasive species located to date.
- No additional field survey or data analysis work has been conducted for the Invasive Plant Study since 2013.

Study 11.9 Objectives

- Identify the locations at which invasive vascular plant species have already become established in the Project area and in nearby disturbed areas
- Estimate population sizes for invasive species and map their current distributions
- Determine whether any of the invasive species found could pose a substantial ecological threat (to native plants and animals) if populations were to spread into the Project area

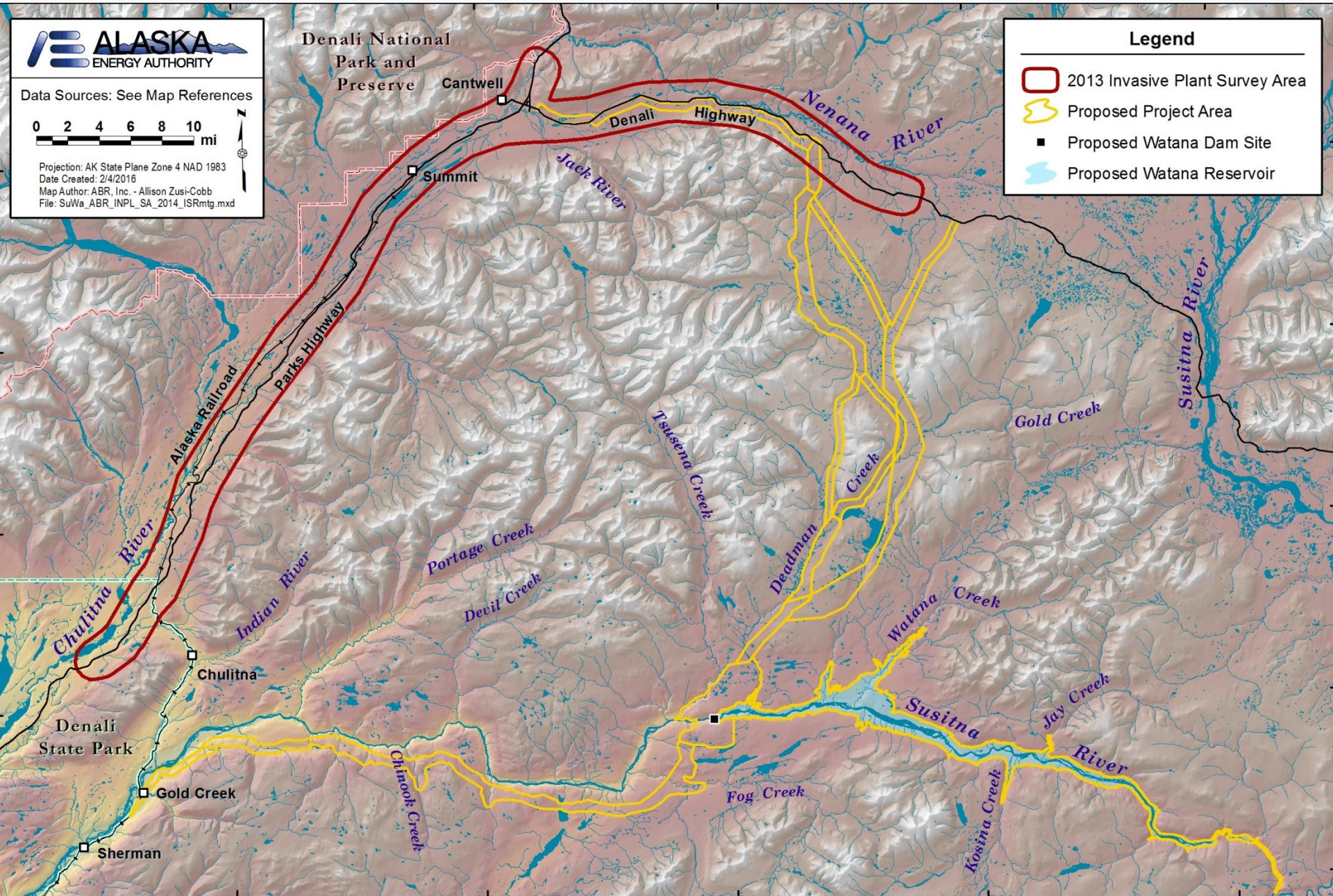
Study 11.9 Components

- Review Alaska Exotic Plants Information Clearinghouse (AKEPIC) database and aerial imagery to identify locations of previous invasive species collections and disturbed sites that could serve as sources of invasive species (ISR Part A, Section 4.1, p. 2)
- Field surveys for invasive vascular plant species in disturbed areas in and near the Project area (ISR Part A, Section 4.1, p. 2)
- Conduct an ecological risk assessment for each of the invasive species found to assess the possibility and the ecological effects of spreading into the Project area (ISR Part A, Section 4.2, p. 4)

Study 11.9 Variances

In 2013, there were no variances from the methods used to conduct field surveys and ecological risk assessments for invasive species as described in the RSP (Section 11.9.4).

Study 11.9 Summary of Results (ISR Part A, Section 5): Area Sampled in 2013



Study 11.9 Summary of Results

(ISR Part A, Section 5)

Field Surveys:

- 107 sites were sampled from August 19–28, 2013
- Sites surveyed included possible source areas for invasive plants (the Denali and Parks highway corridors near the Project area and regularly-used ORV trails that provide access to the Project area)
- 28 of the 107 sites were revisits to sites where infestations of invasive plants had been previously documented by the Alaska Natural Heritage Program
- Invasive species were found at 98 of the 107 sites sampled
- Across all sites, 31 invasive species were found

Study 11.9 Summary of Results

(ISR Part A, Section 5)

The 15 species with the highest invasiveness rankings

Scientific Name	Common Name	No. Sites Recorded	Invasiveness Rank
Melilotus alba	white sweetclover	7	81
Bromus tectorum	cheatgrass	1	78
Vicia cracca ssp. *cracca*	bird vetch	4	73
Linaria vulgaris	butter and eggs	2	69
Melilotus officinalis	yellow sweetclover	1	69
Hordeum jubatum	foxtail barley	50	63
Bromus inermis ssp. *inermis*	smooth brome	5	62
Leucanthemum vulgare	oxeye daisy	2	61
Tanacetum vulgare	common tansy	1	60
Trifolium repens	white clover	7	59
Taraxacum officinale	common dandelion	71	58
Trifolium hybridum	alsike clover	20	57
Crepis tectorum	narrowleaf hawksbeard	10	56
Phleum pratense	timothy	22	54
Poa pratensis ssp. *irrigata*	spreading bluegrass	10	52

Study 11.9 Summary of Results

(ISR Part A, Section 5)

Preliminary Ecological Risk Assessment:

- Populations of invasive species found in 2013 were negligible to small in size, so the current ecological risk from invasive plants—at least in the Parks and Denali highway corridors—is relatively low.
- The two species found that are of greatest concern probably are *Hordeum jubatum* (foxtail barley) and *Melilotus alba* (white sweetclover).
  - *H. jubatum* (invasiveness rank: 63) is able to colonize a wide range of disturbed habitats, from well drained, gravelly substrates to relatively wet, silty soils.
  - *M. alba* (invasiveness rank: 81) is considered one of Alaska's most problematic invasive species, due to its propensity to form dense stands on river bars and potentially having a negative effect on native colonizing plants.
- Both *H. jubatum* and *M. alba*, however, were found mostly at trace (< 1%) and low (1–5%) cover values during the 2013 survey.

AEA's Proposed Modifications to Study 11.9

(ISR Part D, Section 7)

The **Chulitna Corridor was eliminated from** the study area (ISR Part D Overview, Section 1.3) and t**he Denali East Corridor Option was added to the study area** as an additional, alternative north-south corridor alignment for transmission line and road access from the dam site to the Denali Highway (ISR Part C, Section 7.1.2)

Steps to Complete Study 11.9

(ISR Part D, Section 8)

- Conduct field surveys in the next study year in disturbed areas in and near the Project area that were not surveyed in 2013, and estimate the abundance (using percent cover and/or stem-count data) of all invasive species found (RSP Section 11.9.4.1); example sampling areas to be targeted include portions of the Denali Highway (near the Denali East Corridor Option), Stephan Lake and High Lake lodges, Gold Creek Camp, and selected portions of the Alaska Railroad ROW.
- As in 2013, invasive plant records in the Alaska Exotic Plants Information Clearinghouse database and current aerial imagery will be reviewed to help guide survey efforts (RSP Section 11.9.4.1).
- Conduct an ecological risk assessment for the invasive plant species found to evaluate the threat those species may pose to the native plant communities in the Project area (RSP Section 11.9.4.2).

Licensing Participants Proposed Modifications to Study 11.9?

- Agencies
- CIRWG members and Ahtna
- Public