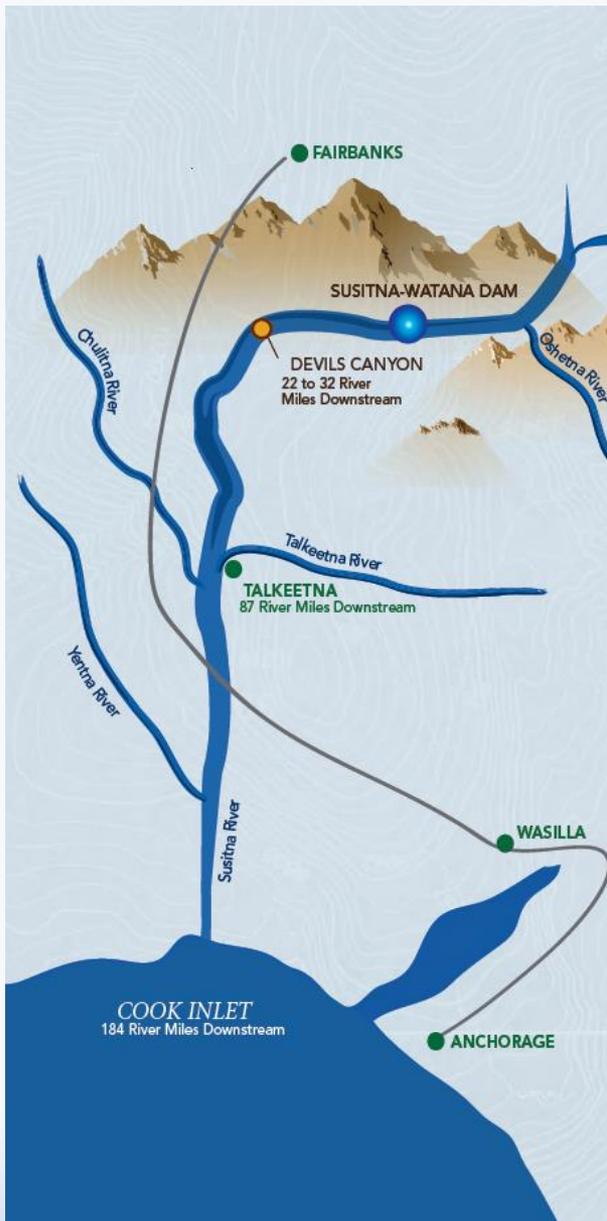


Initial Study Report Meeting

Study 9.16 Eulachon Run Timing, Distribution, and Spawning in the Susitna River

March 22, 2016

Prepared by
R2 Resource Consultants



Study 9.16 Status

- **ISR Documents (ISR Part D, Section 4)**
 - Eulachon White Paper (Mar 22, 2013)
 - Initial Study Report Parts A, B, and C (Jun 3, 2014)
 - 2015 Proposed Eulachon Spawning Habitat Study Modifications TM (Sept 17, 2014)
 - ISR Part D (Nov 6, 2015)
- **First year of data collection completed in 2013 (June 2014 ISR).**
- Since the June 2014 ISR, **AEA has not conducted any additional work** on this study. Therefore, there are no additional results to report for this study.
- **Sept 17, 2014 TM described Study 9.16 modifications** to address an identified eulachon habitat gap in support of Study 9.17 (Cook Inlet Beluga Whale [CIBW]).

Study 9.16 Objectives

- 1) Determine eulachon run timing and duration in the Susitna River in 2013 and 2014
- 2) Identify and map eulachon spawning sites in the Susitna River
- 3) Characterize eulachon spawning habitats
- 4) Describe population characteristics of eulachon returning in 2013 and 2014

Study 9.16 Components

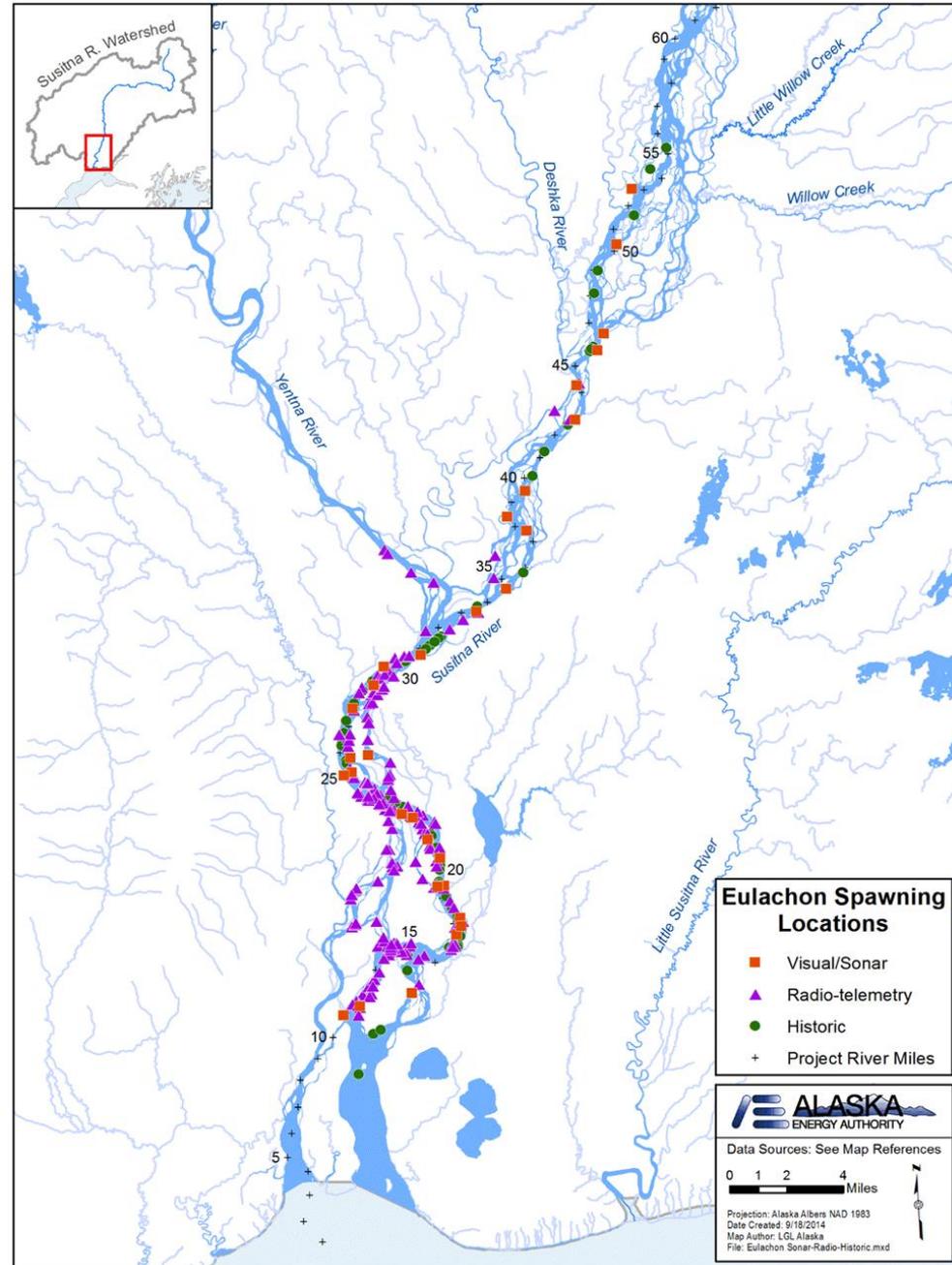
- Determine Eulachon Run Timing and Duration in the Susitna River (ISR Part A, Section 4.1; pg 2)
- Identification and Mapping of Potential Eulachon Spawning Sites (ISR Part A, Section 4.2; pg 7)
- Eulachon Spawning Habitat Characteristics (ISR Part A, Section 4.3; pg 12)
- Eulachon Population Characteristics (ISR Part A, Section 4.4; pg 14)

Study 9.16 Variances

- RSP Section 9.16.4.1.1: The blocking weir was removed due to flood conditions and because turbulence from the weir impeded sonar data collection
- RSP Section 9.16.4.1.3: Water velocity data were not collected at the sonar station because the data were not needed to estimate eulachon run timing
- RSP Section 9.16.4.1.2: **Fish sampling was conducted at other locations along the river**, in addition to the sonar site, to more effectively estimate catch per unit effort (CPUE) and run timing
- RSP Section 9.16.4.1.1: Sonar data collection ended on June 15 when fewer than 2 fish per minute were observed
- RSP Section 9.16.4.2.2: **Visual surveys were also used to identify spawning sites**
- RSP Section 9.16.4.3.2: Visual surveys were the primary method to characterize substrate
- RSP Section 9.16.4.3.3: A grid sampling design was not used to collect water quality information; instead, a randomized approach was used

Summary of Results

(ISR Part A, Section 5)



Modifications to Study

(ISR Part D, Section 7)

- Eliminate blocking weir around the sonar transducer (RSP Section 9.16.4.1.1).
- **Sonar data will be collected until at least June 10** and until less than 2 fish per minute are observed, instead of monitoring until no eulachon were observed for 5 consecutive days after June 10 (RSP Section 9.16.4.1.1).
- Run timing and **population characteristics data will be collected at up to five sites**, instead of near and downstream of the fixed sonar site (RSP Section 9.16.4.1.2).
- No water velocity data will be collected at the sonar site because it is not needed to determine run timing (RSP Section 9.16.4.1.3).
- Eliminate radio-telemetry as it does not provide additional information beyond that already known.
- **Expand visual and sonar surveys downstream of PRM 10.5** to identify the downstream extent of eulachon spawning relative to tidal fluctuation.
- Add a flow-habitat assessment using **Wetted-Perimeter modeling** method (2015 Proposed Eulachon Spawning Habitat Study Modifications TM, filed September 17, 2014).

Steps to Complete Study 9.16

(ISR Part D, Section 8)

- 1) Conduct visual and sonar surveys to identify potential spawning locations in the lower, likely intertidal, reach of the eulachon spawning distribution (PRM 6-11) that was not surveyed in 2013.
- 2) Transects will be established and habitat data will be collected in support of a wetted-perimeter type, Eulachon spawning habitat model.
- 3) Develop the Eulachon spawning habitat model using the field data.
- 4) Use the Eulachon spawning habitat model to quantify and compare the availability of water depths and spawning-sized substrate during eulachon spawning period under pre- and post-Project conditions.

Licensing Participants Proposed Modifications to Study 9.16?

- Agencies
- CIRWG members and Ahtna
- Public