# comprehensive Data delivery README FILE

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| **Study Section** | Study 9.6: Fish and Aquatics Fish Distribution and Abundance |
| **Study Component** | Winter Sonar in the Middle and Lower Susitna River Segments |
| **Field Date Range** | March 22, 2013 – April 8, 2014 |

**Introduction:** The overall goal of this data collection effort was to characterize the winter distribution, relative abundance, and habitat associations of resident and non-salmon anadromous fish species as well as freshwater rearing life stages of anadromous salmonids in the Susitna River with the potential to be affected by construction and operation of the proposed Susitna-Watana Hydroelectric Project (Project) in Alaska.

Eight objectives have been developed for Study 9.6 and some objectives included multiple tasks. Sonar data collected as part of Objective 3 will be used to provide a baseline characterization of fish assemblages as pertains to diurnal movements of fish in winter. These data will support the identification and evaluation of potential Project-induced effects on fish assemblages, and inform development of any necessary protection, mitigation, and enhancement measures.

**Data Summary:** This multi-year study was initiated in 2013 with a pilot study conducted at prioritized locations in the Middle River Focus Area near Talkeetna. A full study was implemented in 2014 that increased effort across multiple habitat types. Sonar sampling took place between Whiskers Creek and Gold Creek. In 2014, monthly sonar imaging sampling took place between February and April. Imaging was analyzed using manual and automated review. Due to differences in organization, the data for both study years are stored in separate datasets. The data structure consists of detailed information about the site (location, habitat, physical attributes, water quality), sampling gear (e.g. sonar type and settings), and fish observed (species, counts, length estimates).

Data were collected in accordance with the methods outlined in the Fish Distribution and Abundance Implementation Plan with the exception of the variances identified in the ISR Part D (November 2015). Data management followed the QA/QC protocol described in the Implementation Plan ultimately resulting in two datasets of sonar imaging data collected for the Susitna-Watana Project.

Data have undergone 3 levels of data quality control (QC), named QC1 to QC3. The QC levels, briefly, are as follows:

* QC1–Field Review: Review of field forms before leaving the field, or the QC level of raw data collected via field equipment such as thermistors, cameras, GPS units, etc.
* QC2–Data Entry: Data from paper forms are entered into an electronic format and verified.
* QC3–Senior Review: Final review by senior professional before submitting field data to AEA, or the QC level of raw data cleaned up for delivery to AEA.

**Data Organization:**  The 2013 and 2014 datasets are stored in separate MS Excel workbooks, each accompanied by data dictionaries of table and attribute descriptions.

**Software Considerations:** MS Excel or compatible software

**Online Data Link:** Folder Winter\_Sonar at <http://gis.suhydro.org/SuWa/09-FISH/9.06-FDAML/>

File 9\_FAQ\_Database\_Data\_Dictionary\_20170630.pdf at <http://gis.suhydro.org/SuWa/09-FISH/00/FAQ_Data_Documentation/>

**Online Report Link:** AEA has prepared several documents with data pertaining to this study component. However, because database QC is an ongoing process, the most recent version of the data found through the hyperlink above may supersede the results reported in study documents. Copies of the datasets used for analysis in the ISR and SIR are available through the hyperlink found at the beginning of the results section (Section 5). To aid review, study documents using this study component are listed below. Each of these documents is accessible on AEA’s Project licensing website (<http://www.susitna-watanahydro.org/type/documents/>) or through FERC’s eLibrary system (<http://www.ferc.gov/docs-filing/elibrary.asp>), in Docket No. P-14241.

| **Title** | **Date** | **Description** | **Link** |
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| ISR Study 9.6 Appendix C: Winter Sampling Report | 6/3/2014 | This report summarized lessons learned during the 2012-2013 winter pilot studies and developed sampling recommendations, locations and techniques for 2013/2014 Winter Fish Studies. | [June 2014 TM for Study 9.6](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_4_of_5_App_C.pdf) |
| 2013-2014 Winter Fish Study Technical Memorandum | 9/14/2014 | This technical memorandum provides methods and preliminary results for 2013/2014 Winter Fish Studies. This TM is a supplement to the Initial Study Report. | [Sept. 2014 TM for Study 9.6](http://www.susitna-watanahydro.org/wp-content/uploads/2014/09/09.06_FDAML_Winter_TM.pdf) |
| Fish Distribution and Abundance in the Middle and Lower Susitna River (Study 9.6) – 2014 – 2015 Study Implementation Report | 11/5/2015 | 2014 - 2015 Study Implementation Report for Study 9.6. | [2014-2015 SIR for Study 9.6 (File 1)](http://www.susitna-watanahydro.org/wp-content/uploads/2015/11/09.06_FDAML_SIR.pdf)[2014-2015 SIR for Study 9.6 (File 2)](http://www.susitna-watanahydro.org/wp-content/uploads/2015/11/09.06_FDAML_SIR_App_A.pdf)[2014-2015 SIR for Study 9.6 (File 3)](http://www.susitna-watanahydro.org/wp-content/uploads/2015/11/09.06_FDAML_SIR_App_B_FishID.pdf) |
| [Response of the Alaska Energy Authority to Comments on the Initial Study Report](http://www.susitna-watanahydro.org/wp-content/uploads/2016/11/ISR_Response_OCT_2016.pdf) | 10/24/2016 | This document provides a technical response to stakeholder comments on the Initial Study Report.  | [Oct. 2016 Response for Study 9.6](http://www.susitna-watanahydro.org/wp-content/uploads/2016/11/ISR_Response_OCT_2016.pdf) |

**[[1]](#endnote-1)**

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