# comprehensive Data delivery README FILE

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| **Study Section** | Study 9.6: Fish and Aquatics Fish Distribution and Abundance |
| **Study Component** | Winter Fish Study (WFS) in the Lower and Middle Susitna River Segments |
| **Field Date Range** | February 3, 2013 – April 12, 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. Winter fish sampling data collected as part of Objectives 1 through 6 will be used to provide a baseline characterization of fish assemblages 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 Areas near Talkeetna. In 2014, a full study design was implemented the geographic scope was expanded and additional effort was applied. Sampling took place at selected locations between Montana Creek and Indian River. In 2013 and 2014, sampling was generally once a month from February to ice-breakup with an additional sample in November, 2013 during freeze-up. The data for both study years are stored in a single database, providing a consistent database structure for efficient querying and analysis. The data structure consists of detailed information about the site (location, habitat, physical attributes, water quality), sampling gear (e.g. mesh sizes, effort applied, equipment settings) and fish collected (species, counts, measurements, and disposition).

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 a relational database of all winter fish distribution and abundance data collected for the Susitna-Watana Project.

Data have undergone 5 levels of data quality control (QC), named QC1 to QC5. 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.
* QC4–Database Validation: Tabular data files are verified to meet Project database standards.
* QC5–Technical Review: Data revision or qualification by senior professionals when analyzing data for reports.

**Data Organization:**  WFS data are organized as an MS Access relational database.

The database is accompanied by data dictionaries for information such as table and attribute descriptions and relationship keys.

**Software Considerations:** MS Access version 2003 or newer is needed for database use.

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

and 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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| Draft Initial Study Report for Study 9.6 | 2/3/2014 | This draft of the ISR summarized the study methods and variances during the 2013 study season, and presented preliminary data collected for Study 9.6. This draft ISR was later republished as Part A of the final ISR. | [Draft ISR for Study 9.6 (File 1)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/01/09.06_FDAML_ISR_Draft_1_of_5.pdf)[Draft ISR for Study 9.6 (File 2)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/01/09.06_FDAML_ISR_Draft_2_of_5_App_A.pdf)[Draft ISR for Study 9.6 (File 3)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/01/09.06_FDAML_ISR_Draft_3_of_5_App_B.pdf)[Draft ISR for Study 9.6 (File 4)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/01/09.06_FDAML_ISR_Draft_4_of_5_App_C.pdf)[Draft ISR for Study 9.6 (File 5)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/01/09.06_FDAML_ISR_Draft_5_of_5_App_D-F.pdf) |

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| Initial Study Report for Study 9.6 | 6/3/2014 | This document is the Initial Study Report (Parts A, B and C) for Study 9.6. Part A republishes the Draft ISR. Part B identifies supplemental information and errata in Part A. Part C presents study modifications and plans for completing the study. | [ISR Part A for Study 9.6 (File 1)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_1_of_5.pdf)[ISR Part A for Study 9.6 (File 2)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_2_of_5_App_A.pdf)[ISR Part A for Study 9.6 (File 3)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_3_of_5_App_B.pdf) [ISR Part A for Study 9.6 (File 4)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_4_of_5_App_C.pdf)[ISR Part A for Study 9.6 (File 5)](http://www.susitna-watanahydro.org/wp-content/uploads/2014/05/09.06_FDAML_ISR_PartA_5_of_5_App_D-F.pdf)[ISR Part B for Study 9.6](http://www.susitna-watanahydro.org/wp-content/uploads/2014/06/09.06_FDAML_ISR_PartB.pdf)[ISR Part C for Study 9.6](http://www.susitna-watanahydro.org/wp-content/uploads/2014/06/09.06_FDAML_ISR_PartC.pdf) |

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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)**

1. **Data Distributor Contact Information:**

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