# Comprehensive Data Delivery README FILE

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| **Study Section** | Study 11.7: Wetland Mapping Study in the Upper and Middle Susitna Basin |
| **Study Component** | (not applicable) |
| **Prepared By** | ABR, Inc.—Environmental Research & Services |
| **Data Collection and Processing By** | Wendy Davis and Sue Ives, ABR, Inc.—Environmental Research & Services |
| **Field Date Range** | June 19, 2012–August 30, 2015 |

**Introduction:** The overall goal of this effort was to prepare a map of existing wetland habitats and to assess their relative functional value in areas with the potential to be affected by construction and operation of the proposed Susitna-Watana Hydroelectric Project (Project) in Alaska.

The study area for the Wetland Mapping Study in the Upper and Middle Susitna Basin (hereafter Wetland Mapping Study) consists of a 2-mi buffer zone surrounding the proposed reservoir (at projected maximum pool elevation), the dam and camp facilities area, and the three alternative transportation/access road corridors. This multi-year study was initiated in 2012 and the mapping of wetlands was completed in 2016. The Study Completion Report (SCR) for the study was finalized in 2017.

**Data Summary:** Data for the Wetland Mapping Study consist of field ground-reference data, GIS data layers created in the process of mapping wetlands and assessing wetland functions, and functional assessment modeling data. All field data for the study were collected electronically on hand-held computers. All data for the study have undergone at least a QC3 level of review.

*Field Data*—In 2012, 2013, and 2015, field wetland determinations in the study area were made using the three-parameter approach required for wetland permitting in Alaska by the U.S. Corps of Engineers (USACE). This includes collecting data on vegetation, soils, and hydrology. These data were collected using the *Wetform* database and are displayed for each field plot in data sheets formatted per USACE specifications (see Data Organization below). Additional wetland classification and wetland functional capacity indicator data also were recorded at each wetland determination plot. Rapid map-verification plots were sampled to provide further documentation of aerial image signatures and to aid the wetland mapping effort.

*Map Data*—The mapping of wetlands was conducted using recent, high-resolution aerial imagery following protocols for preparing wetland maps developed by the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) program. In the mapping effort, six landscape attributes or Integrated Terrain Units (ITUs) were assigned to each map polygon. After completion of the mapping, ITUs were aggregated into wetland functional classes to facilitate the wetland functional assessment. The ITUs mapped were NWI wetland type, vegetation type, hydrogeomorphic class, and physiography, surface form, disturbance classes.

*Functional Assessment Data*—The wetlands functional assessment was conducted using a combination of functional capacity modeling based on the field data for the wetland functional classes and the incorporation of spatially referenced data from other Project studies to identify areas of higher wetland function (e.g., areas that support a greater number of bird and mammal species and/or have higher fish habitat-use indices). The methodology used was prepared specifically for this study and was termed the Susitna-Watana Wetland Functional Assessment Method (SUWA-WFAM).

**Data Organization:** Field data collection and mapping for Study 11.7 were conducted concurrently with Vegetation and Wildlife Habitat Mapping in the Upper and Middle Susitna Basin (Study 11.5). Because the two studies share most field data and mapping files. All data for both Study 11.5 and Study 11.7 are archived under Study 11.7. The prefix “WETLND” indicates that a file pertains to Study 11.7, and the prefix “VWHAB” indicates a file pertains to Study 11.5.

Field data for the study are archived in the subfolder /11-BOT/11.07-WETLND/Field\_Data/. The folder contains one access database (11\_7\_WETLND\_20170630.accdb) and two subfolders in which all the field data are contained. The tabular data include:

* wetlnd\_vwhab\_determination\_plots: contains hyperlinks to the USACE-formatted datasheet for each wetland determination plot
* wetlnad\_vwhab\_plot\_photos: contains hyperlinks to photographs of each field plot
* wetlnd\_vwhab\_verification\_plots\_id: rapid map-verification plot data
* wetlnd\_vwhab\_verification\_plots\_cover: cover data associated with rapid map-verification plots
* wetlnd\_classification\_functional\_assessment\_data: additional wetland classification and functional assessment field data collected at each wetland determination plot

The subfolders noted below (nested under the Field\_Data subfolder) contain additional data for each field plot. The field photos and USACE wetland data forms are linked to field plot locations in the feature classes noted below:

* Photos: contains landscape, vegetation, and soil photos for each wetland determination plot and landscape and vegetation photos for each map-verification plot; the photos are housed in separate subfolders identified by the field plot number and are accessible through hyperlinks in the feature class WETLND\_VWHAB\_Field\_Plot\_Photos.
* Wetland\_Determination\_Forms: contains the wetland determination data in the USACE data-sheet format for each field plot. Individual determination forms are accessible through hyperlinks in the feature class WETLND\_VWHAB\_Field\_Plots.

The GIS data are archived in the GIS subfolder /11-BOT/11.07-WETLND/GIS, which contains one geodatabase (SuWa\_11\_7\_GIS\_20170630.gdb) containing:

* Study Areas (5 feature classes from different phases/years of the Project)
* WETLND\_VWHAB\_StudyArea\_Corridors: wetland mapping study area, by project component
* WETLND\_VWHAB\_Mapping: wetland and wildlife habitat map polygon file
* WETLND\_VWHAB\_Field\_Plots: point file of field plot locations, with hyperlinks to wetland determination forms
* WETLND\_VWHAB\_Field\_Plot\_Photos: point file of field plot photos, with hyperlinks to photos
* WETLND\_VWHAB\_Field\_Plot\_Anno: geodatabase annotation for point file of field plot locations
* VWHAB\_HIST\_1980s\_VegRecode: historical vegetation mapping from the 1980s
* WETLND\_FunctionalAssessment: polygon file of wetland functional assessment results

The classification and wetland functional assessment model (WFAM) data are archived in the /11-BOT/11.07-WETLND/Classification\_WFAM subfolder in an Access database (11\_7\_WFAM\_20170630.accdb). These data include:

* wetlnd\_functional\_class\_itu\_aggregation: aggregated ITU variable combinations and their corresponding wetland functional class and Cook Inlet Classification wetland class.
* wetlnd\_functional\_assessment\_models\_variables\_weights: SUWA-WFAM model variables and weighting factors for 8 functions
* wetlnd\_functional\_assessment\_model\_results: SUWA-WFAM model results for 8 functions
* wetlnd\_functional\_assessment\_model\_summary: SUWA-WFAM model result summary statistics for 8 functions

**Online Data Link:** <http://gis.suhydro.org/SuWa/11-BOT/11.07-WETLND/>

**Online Report Link:** 11.07 Wetland Mapping Study in the Upper and Middle Susitna Basin – Study Completion Report under 2017; Study Completion and Implementation Reports at <http://www.susitna-watanahydro.org/type/documents>

[[1]](#endnote-1)

1. **Data Distributor Contact Information:**

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