# Comprehensive Data Delivery README FILE

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| **Study Section** | Study 10.17: Population Ecology of Willow Ptarmigan in Game Management Unit 13 Study |
| **Study Component** | (not applicable) |
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| **Data Collection and Processing By** | Graham G. Frye, University of Alaska Fairbanks;  Richard A. Merizon, Alaska Department of Fish and Game, Palmer |
| **Field Date Range** | May 10, 2013 through June 25, 2016 |

**Introduction:** The overall goal of this data collection effort was to document the seasonal distribution, seasonal migratory patterns, abundance, and survival of Willow Ptarmigan in areas with the potential to be affected by construction and operation of the proposed Susitna–Watana Hydroelectric Project (Project) in Alaska. Willow Ptarmigan are the predominant species of upland game bird in the Project area and surrounding areas.

The study team selected 5 sites (Denali Highway, Butte Creek, Deadman Lake, Upper Fog Lakes, Busch Creek) for captures based on the following criteria: willow ptarmigan abundance or habitat quality; proximity to the proposed reservoir and alternative access routes; ease of access using either fixed-wing or helicopter; observed spring conditions (e.g., snow depth and habitat availability) during the capture time period. Between April 2013 and August 2015, the study team captured 243 Willow Ptarmigan at five sites in GMU Subunits 13A and 13E and fitted the birds with (VHF) radio transmitters.

Aerial telemetry surveys were conducted in appropriate habitats within 50 miles of the original capture locations to encompass the expected range of movements by the majority of radio-collared birds. During May 2014 and 2015, the study team conducted distance-sampling surveys at four of the capture sites (Denali Highway, Butte Lake, Big Lake, Fog Lake) to estimate the densities of territorial Willow Ptarmigan. Aerial transect surveys were planned to assess the abundance and density of ptarmigan using line-transect or repeat-count techniques (Buckland et al. 2001, Royle and Dorazio 2008). In addition to abundance, these surveys were intended to provide data on the overall distribution of all ptarmigan (not just radio-collared individuals) in GMU Subunits 13A and 13E. The study team completed surveys in January and March 2014, but those surveys did not produce usable results because ptarmigan did not consistently flush in response to the aircraft. Therefore, AEA decided to cancel this component of the study in October 2014 due to its inability to provide a robust data set and resources were reallocated to support additional radio telemetry flights instead.

This multi-year study was initiated in 2013 and completed in 2016. The Study Completion Report (SCR) for the study was produced in 2017.

**Data Summary:** Data for the Ptarmigan Study consist of confidential telemetry location and distance sampling spreadsheets, and a public geodatabase containing feature classes for the study area, aerial survey areas, capture sites, estimated density, and expected distribution. Locations from telemetry tags and aerial surveys are confidential by Alaska state statute; therefore polygons summarizing results of analyses are presented in GIS rather than specific animal locations. All data for the study have undergone a QC3 level of review.

*Telemetry Location Data*— Radio-collared ptarmigan were relocated periodically between June 2013 and June 2016.

*Distance Sampling Data*— Distance sampling surveys were conducted in May of 2014 and 2015.

**Data Organization:**

Telemetry location spreadsheet data: CONFIDENTIAL\_10\_17\_PTAR\_Distance\_Sampling\_20170630.xlsx is archived with AEA in the directory, /10-WILD/10.17-PTAR/CONFIDENTIAL.

Distance sampling spreadsheet data: CONFIDENTIAL\_10\_17\_PTAR\_Telemetry\_Location\_20170630.xlsx is archived with AEA in the directory, /10-WILD/10.17- PTAR/CONFIDENTIAL.

GIS data are archived in the public directory /10-WILD/10.17- PTAR/GIS in a geodatabase (SuWa\_10\_17\_GIS\_20170630.gdb) containing the following feature classes:

* PTAR\_2013\_Study\_Area
* PTAR\_2014\_2015\_Study\_Area
* PTAR\_90percent\_Limit\_Elev
* PTAR\_99percent\_Limit\_Elev
* PTAR\_2013\_2015\_AerialSurveyArea
* PTAR\_2013\_2015\_Capture\_Sites
* PTAR\_2014\_2015\_PredictionGridSites

**Online Data Link:** <http://gis.suhydro.org/SuWa/10-WILD/10.17-PTAR/>

**Online Report Link:** 10.17 Population Ecology of Willow Ptarmigan in Game Management Unit 13 Study – 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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