Suggested citation:

Harrison, A.-L., Uher-Koch, B.D., Schmutz, J.A., Douglas, D.C., 2020, Tracking data for Pacific Loons (Gavia pacifica) (ver 1.0, February 2020): U.S. Geological Survey data release, https://doi.org/10.5066/P9NNN2XY

Background:

The Pacific loon tracking data available here (ver 1.0) are limited to the individual birds and location data that were analyzed and provided to accompany the journal article, Poessel et al 2020. Consequently, this data release is restricted to locations of tagged Pacific loons on their summer range in northern Alaska, between June and October. A full release of all Pacific loon tracking data (ver 2.0) is anticipated.

Poessel, S.A., Uher-Koch, B.D., Pearce, J.M., Schmutz, J.A., Harrison, A.L., Douglas, D.C., von Biela, V.R., Katzner, T.E. 2020. Movements and habitat use of loons for assessment of conservation buffer zones in the Arctic Coastal Plain of northern Alaska. Global Ecology and Conservation:e00980 doi:10.1016/j.gecco.2020.e00980

Data package files:

File name*	File contents	File format
.\processedData files:		
<NAME>_deploymentAttributes.csv	Deployment data	UTF-8 (ASCII), CSV
<NAME>_diag_filteredLocations.csv	Argos DIAG tab, w/ filter flag	UTF-8 (ASCII), CSV
<NAME>_processedData_metadata.xml	Metadata	UTF-8 (ASCII), XML

*<NAME>: pacificLoon _USGS_ASC_argos

Processed data-package file descriptions

- Deployment Attributes file:

  Contains information that documents which transmitters were deployed on which individual animals, the deployment dates, and ancillary attributes about the animals if recorded (e.g., sex, age, weight, etc.).

  This file contains a categorical variable named *Deployment_Fate* with five possible values: alive, dead, shed, shed/dead, and undetermined. The value of *Deployment_Fate* was determined by a manual assessment of sensor and movement data with the goal of defining the date/time when tracking each live free-ranging animal may have ended. That date/time is recorded in the variable *Deployment_End_Timestamp_UTC*.

Deployment_Fate		*Deployment_End_Timestamp_UTC*
alive	Default – No evidence that animal died or shed PTT	Date/time of the last transmission obtained from the PTT
shed	Definitive – a live animal observed without attached PTT	Date/time of the last transmission obtained from the PTT with sensor data indicating attachment to a live free-ranging animal
dead	Definitive – observed carcass or unambiguous sensor data	

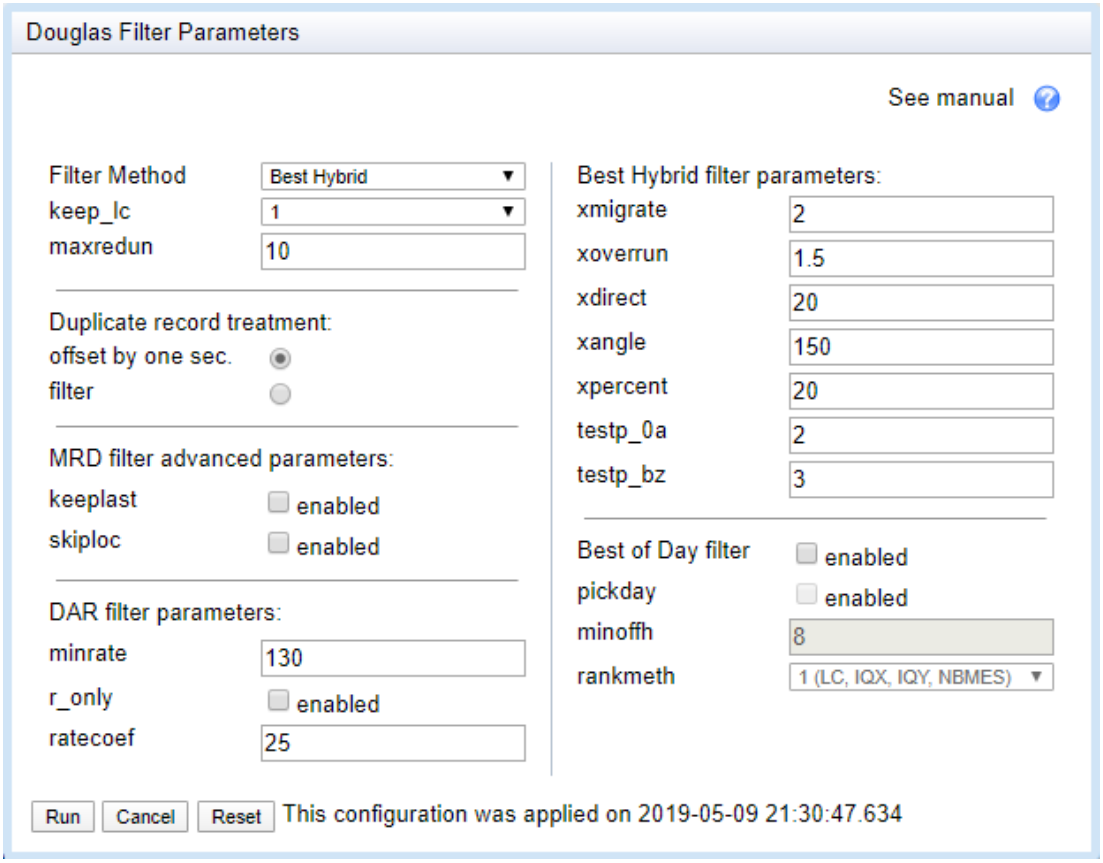
shed/dead	Ambiguous – evidence of shed or dead, but insufficient evidence to distinguish which one	
undetermined	No assessment of mortality or attachment	No date/time is provided

All tabular-format data files in this data package include a related, *Tracking_Status,* variable. *Tracking_Status* = 'alive' for all data records collected while the animal was believed to be alive. This current version 1.0, includes only locations presented in Poessel et al 2020, all records are *Tracking_Status* = 'alive'.

- Filtered Argos DIAG data - tabular format:

This data file contains only Argos DIAG records with location estimates deemed plausible by the Douglas Argos-filter (DAF). A variable named "*DAF_Filter*" has been added by USGS that flags implausible locations: *DAF_Filter*= 1 for implausible locations and *DAF_Filter*=0 for plausible locations. Implausible locations were identified using the Douglas Argos-filter Algorithm as implemented at the Movebank tracking data portal (www.movebank.org) as follows:

The Argos DIAG tabular data and telemetry attributes files were uploaded into a Movebank Study named "pacificLoon_USGS_ASC_argos". The DAF was then applied using the user-defined parameters shown below:



As recommended by Douglas et al. (2012), DAF decisions for each animal's track were manually scanned and over-ridden when deemed appropriate. The final binary filtering flags were downloaded from Movebank and added to the DIAG tabular file (the *DAF_Filter* variable as described above). The processed DIAG tabular file also adds the *Latitude* and *Longitude* variables that contain an algorithm-derived choice between the two location solutions (*Location_Lat/Long_Solution_1* vs. *Solution_2*) which are products of Doppler-based geolocation methods. These location estimates were derived by Argos using Kalman Filter processing, the two location solutions are identical for most records; they only differ when the Kalman Filter method failed and Least Squares processing was used instead.

Metadata

FGDC metadata records are included with each data folder. The metadata provides specific details and definitions about all data files and variables. We encourage users to carefully examine the associated metadata to understand appropriate use and data limitations

Reading the data with Program R

Program R code designed to read the processed data-package files is provided on the USGS Alaska Science Center, Wildlife Tracking Data Collection webpage at: https://doi.org/10.5066/P9VYSWEH.