



Introduction to the Integration of Animal Tracking and Remote Sensing

May 20 & 22, 2025

12:00 - 13:30 EDT (UTC-4)

Animals are sentinels of environmental change, and animal telemetry is a commonly used tool to quantify habitat use and help understand environmental changes. NASA data can be used to characterize the environmental parameters that infer the habitats that animals use. This training course will provide participants with an overview of animal tracking sensors, NASA's history of animal tracking, and the types of remote sensing data that can be paired with animal telemetry. Because animal telemetry collects frequent animal location data, it is important to consider time-matched remote sensing in data analyses. In remote marine environments, for example, Level 3 and Level 4 products provide the most complete spatiotemporal coverage, such as OSCAR for ocean surface currents.

Participants will then learn how to integrate telemetry and remote sensing data by applying a basic data standardization process to animal tracking data, visualizing the animals' distribution via home ranges with utilization distributions, downloading remote sensing data, and characterizing animals' habitats in a species distribution model to infer habitat use. The balance of tradeoffs (spatiotemporal mismatches; computational power and time) from pairing remotely sensed data with animal tracks will be discussed. Examples for both marine and terrestrial environments will be provided.

Part 1: Introduction to Animal Tracking and Remote Sensing at NASA

ARSET trainers: Juan Torres-Pérez

Guest Instructors: Dr. Morgan Gilmour (NASA Ames Research Center), Claire Teitelbaum (Assistant Unit Leader, Georgia Cooperative Fish and Wildlife Research Unit)

- Overview of animal tracking
- How is remote sensing related to animal tracking?
- Working with animal tracking data
- Summary
- Q&A session

Part 2: Integration of Animal Tracking and Remote Sensing Data

ARSET trainers: Juan Torres-Pérez

Guest Instructors: Dr. Morgan Gilmour (NASA Ames Research Center), Claire Teitelbaum (Assistant Unit Leader, Georgia Cooperative Fish and Wildlife Research Unit)

- Integration of animal tracking and remote sensing: Case study (Marine)
- Integration of animal tracking and remote sensing: Case study (Terrestrial)
- Summary
- Q&A session



ARSET empowers the global community through remote sensing training.