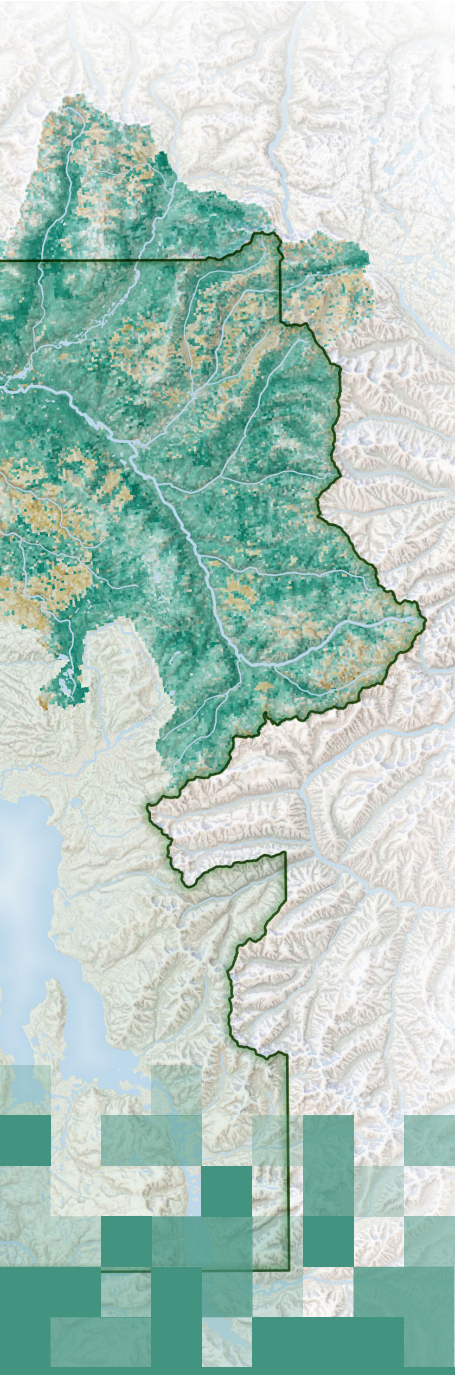

National Aeronautics and
Space Administration

Species Distribution Monitoring with Remote Sensing

August 12, 17, & 19, 2021

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

Species Distribution Models (SDMs) play a critical role in biodiversity, conservation, and understanding the potential impacts to ecosystems under changing climate conditions. SDMs contextualize future scenarios based on known or projected ecological parameters and are the cornerstone for adaptive management planning around short- and long-term changes to complex landscapes. This training will provide an overview of SDMs, show how to use remote sensing data for landscape characterization, and highlight multiple Applied Sciences projects that have developed tools for conducting SDM for a variety of ecosystems. This will include a special session on the Wallace R-based platform for modeling of species niches and distributions. Attendees will be provided with demonstrations and additional resources for using these tools for their own species modeling applications.

Part 1: Overview of Species Distribution Models (SDMs)

- Introduction to SDMs
- Species data
- Remote sensing of predictor variables
- Model development
- Pros/Cons and summary
- Q&A

Part 2: Using Wallace to Model Species Niches and Distributions

- Introduction to SDMs in Wallace
- Wallace Walkthrough: Running a full SDM workflow
- SDM Extensions: SDM comparisons and post-processing for conservation decision-making and beyond
- Summary
- Q&A

Part 3: Additional SDM Tools and Techniques, ASP Projects, and Summary

- Mapping Application for Penguin Populations and Projected Dynamics (MAPPPD)
- Wildlife Insights
- Map of Life
- Circuitscape
- Fisheries and Climate Toolkit (FaCeT)
- Summary/Wrap Up
- Q&A

ARSET empowers the global community through remote sensing training.

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