Remote Sensing Basics

Fundamentals of Remote Sensing

Participants will become familiar with satellite orbits, types, resolutions, sensors, and processing levels. In addition to a conceptual understanding of remote sensing, attendees will also be able to articulate its advantages and disadvantages. Participants will also have a basic understanding of NASA satellites, sensors, data, tools, portals, and applications to environmental monitoring and management.
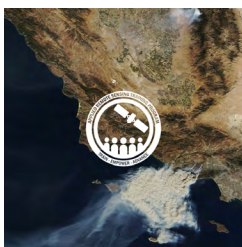
NASA'S Earth Observing Fleet

Get familiar with Earth observing satellites in NASA's fleet, sensors that collect data you can use in ARSET trainings, and their potential applications.

Wildland Fires - 2023

Assessing the Impacts of Fires on Watershed Health

Advanced - 2023

This advanced-level training will focus on using remote sensing observations for monitoring post-fire impacts on watershed health, building off the ARSET training offered in 2021: Satellite Observations and Tools for Fire Risk, Detection, and Analysis. Specifically, this training will highlight uses of NASA Earth observations (EO) for pre-fire land cover mapping, watershed delineation and stream mapping, post-fire burn severity mapping, and pre- and post-fire riverine and freshwater water quality.

Wildland Fires - 2022

Using Earth Observations for Pre- and Post-Fire Monitoring

Advanced - 2022

During the first session, this training will review pre-fire risk assessment by investigating land surface variables (e.g., vegetation type and height, fuel regimes, fuel moisture, and topography) and climate variables (e.g., temperature and precipitation). In the second session, this training will teach you to conduct post-fire mapping of burned area and burn severity using vegetation indices such as the Normalized Burn Ratio (NBR).

Wildland Fires - 2021

Satellite Observations and Tools for Fire Risk, Detection, and Analysis (Bilingual)

Remote sensing can be used to monitor pre-, during-, and post-fire conditions; including weather and climate conditions, fuel characterization, fire risk, smoke detection, monitoring, and forecasting, fire behavior, and the post-fire landscape. This 6-part, intermediate training will provide lectures and case studies focused on the use of Earth observations for operational fire monitoring: pre-, during-, and post-event.

Wildland Fires - 2018

Techniques for Wildfire Detection and Monitoring

Advanced - 2018

With more frequent and severe droughts, certain areas are experiencing longer fire seasons. Wildfire detection, monitoring, and mitigation is increasingly important in these regions. Satellite remote sensing data is useful for identifying active fires, evaluating burned areas, and assessing fire emissions. This advanced training will highlight tools useful for local fire managers. Presentations and exercises will introduce participants to tools to identify active fires, visualize fire emissions, and calculate burn severity.