



NEON OPEN DATA

Airborne Observation Platform

Imaging spectrometers break the electromagnetic spectrum into groups of bands that support classification of objects by their spectral properties on the earth's surface.



Explore data at:
[data.neonscience.org/
data-products](https://data.neonscience.org/data-products)

The AOP produces 29 of the NEON data products. The products are separated into categories of Level 1, Level 2, and Level 3 (L1, L2, L3). L1 represents the least processed data products with additional processing steps undertaken to transition the L1 data to L2 and L3. Broadly, the L1 and L2 products are provided by individual aircraft flight line, while L3 products are provided in 1 km by 1 km tiles. Generally, the data volume for L1 products is the highest and decreases for L2 and L3 products. Details of the different products within each Level can be found in the individual webpages for each sensor. All AOP data products can be found on NEON's Data Portal.



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Airborne Observation Platform

What is the National Ecological Observatory Network (NEON)?

NEON is a continental-scale ecological observation facility, funded by the National Science Foundation and managed by Battelle, designed to collect long-term open access data to better understand how U.S. ecosystems are changing. Airborne remote sensing data are collected on a regional scale across the NEON field sites and Domains.



Airborne Observation Platform (AOP)

NEON's airborne remote sensing surveys done by AOP are conducted over NEON field sites during peak greenness. Collected data provide quantitative information on land cover and changes to ecological structure and chemistry, including the presence and effects of invasive species.



LEARN MORE ABOUT
NEON'S AOP, FLIGHT
SCHEDULES, AND MORE...

AOP Data Collection Methods

Lidar data

Lidar, or Light Detections & Ranging, is used to map ecosystem parameters, including vegetation height, density, and other characteristics across a region.

Sensors:

Optech ALTM Gemini, Optech Galaxy Prime & Riegl LMS-Q780

Resolution:

Discrete point cloud data & waveform:
~1-10+ points/waveforms per square meter
Discrete derived products: ~one meter



Hyperspectral data

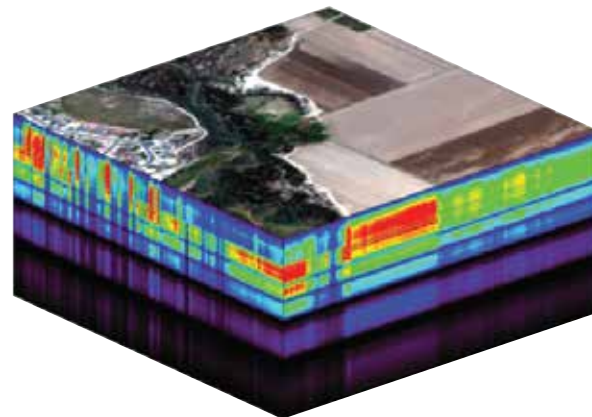
Hyperspectral data is collected by imaging spectrometers to identify plant species and communities, map vegetation health, detect disease or invasive species, and map drought and its impacts. AOPcollect measurements of sunlight reflected from Earth's surface in hundreds of narrow (typically 5nm) spectral channels covering a range of wavelengths from 380 - 2500 nm, far beyond the range of human sight.

Sensor:

NASA JPL AVIRIS-NextGen imaging spectrometers

Resolution:

~one meter, at nominal flying altitude, for most NEON sites.



Hi-res Camera

A digital camera collects imagery from the visible portion of the electromagnetic spectrum (Red-Green-Blue [RGB]) to provide high-resolution (5-10cm) photo mosaics of the surface below.

Sensors:

Phase One iXM-RS150F & iXU-RS1000

Resolution:

iXM-RS150F: 14204 x 10652 (150 mp)
iXU-RS1000: 11608 x 8708 (100 mp)



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Operated by Battelle