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neon  
Operated by Battelle

# NEON Update – A quick overview of NEON and CIMEL support

# NEON's data collection methods

These three systems collect data within close proximity of each other at each site



Airborne Remote Sensing



Observational Sampling

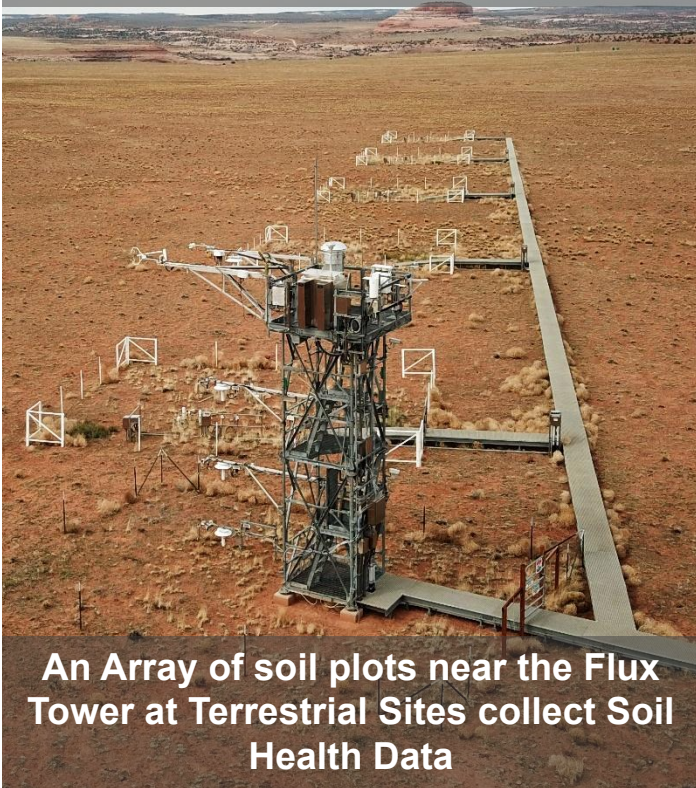


Automated Instruments



# Automated Instruments

**Flux Tower at Terrestrial Sites**



An Array of soil plots near the Flux Tower at Terrestrial Sites collect Soil Health Data



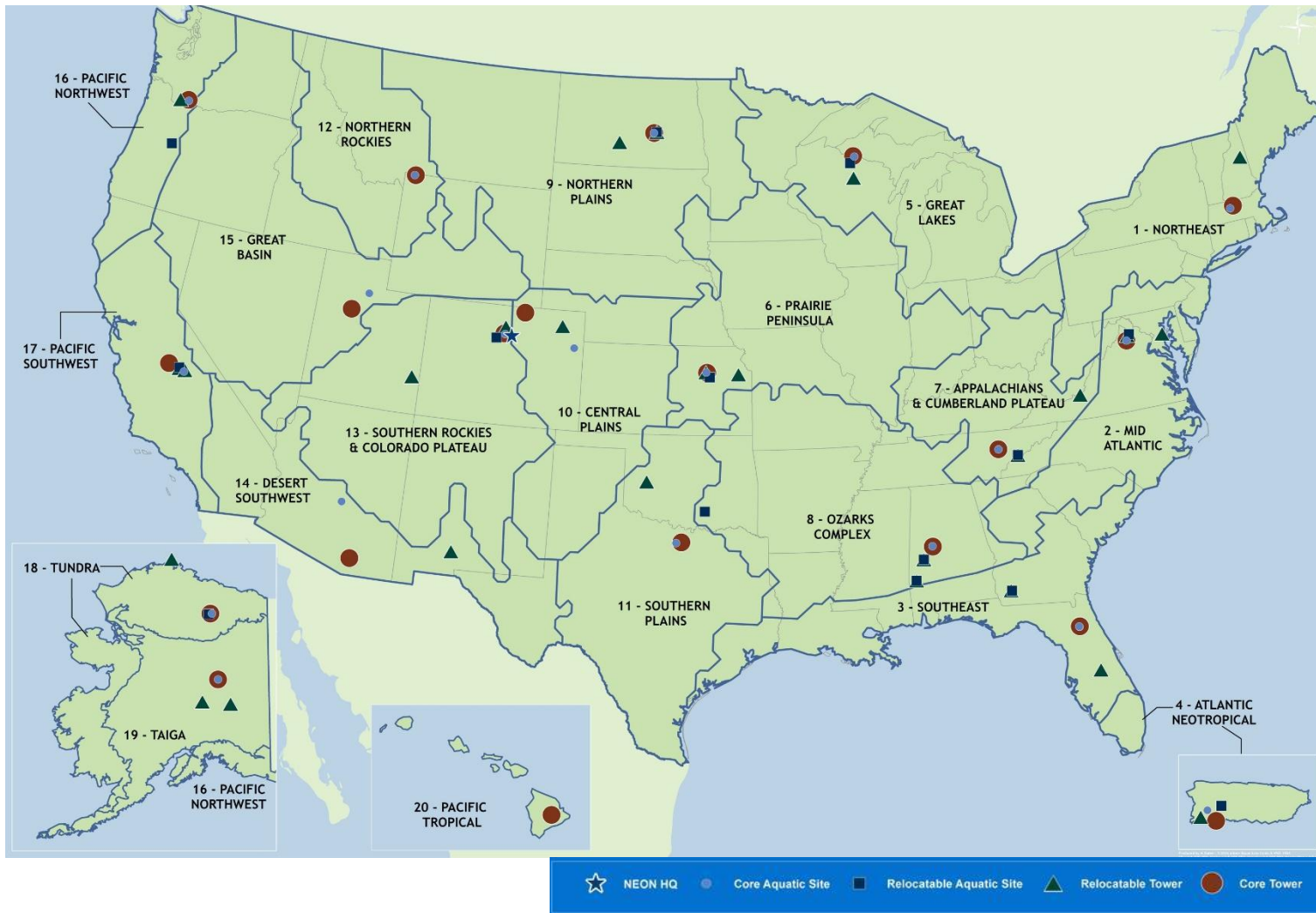
Ground, Lakes & Streams at Aquatic Sites providing Water Quality



**Micrometeorology Stations at Aquatic Sites**



# NEON's Field Sites & Data Products



**81**  
FIELD SITES

- 47 terrestrial
- 34 aquatic

Over  
**180**  
DATA PRODUCTS

**50**  
SENSORS

# What is the National Ecological Observatory Network (NEON)?

The National Science Foundation's NEON program is a continental-scale ecological observation facility operated by Battelle. NEON provides:

- Free and open data on the drivers of and responses to ecological change
- A standardized and reliable framework for research and experiments
- Data interoperability for integration with other national and international network science projects
- 30 years of operations = collect and provide data, educational resources and infrastructure to users. (Currently 6 years in)

# NEON's Standardized Framework

- **Traceability**

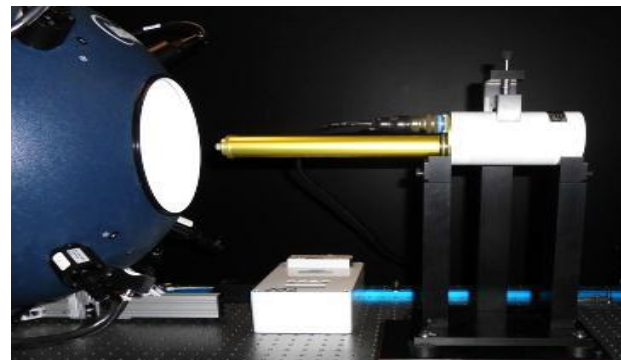
- NEON's In-house Metrology Lab: Calibration, Validation and Audit Lab (CVAL)
- Requirements and protocols set forth by other observatories and governing bodies

- **Transparency**

- Algorithm Theoretical Basis Documents (ATBDs)
- Versioning/Revisioning System

- **Reliability**

- Commissioning: Data products tested and verified
- Network of field scientists to address on-site sensor maintenance and problem identification
- Automated and Manual QA/QC of data products
- Field audits to ensure consistency in protocol deployment



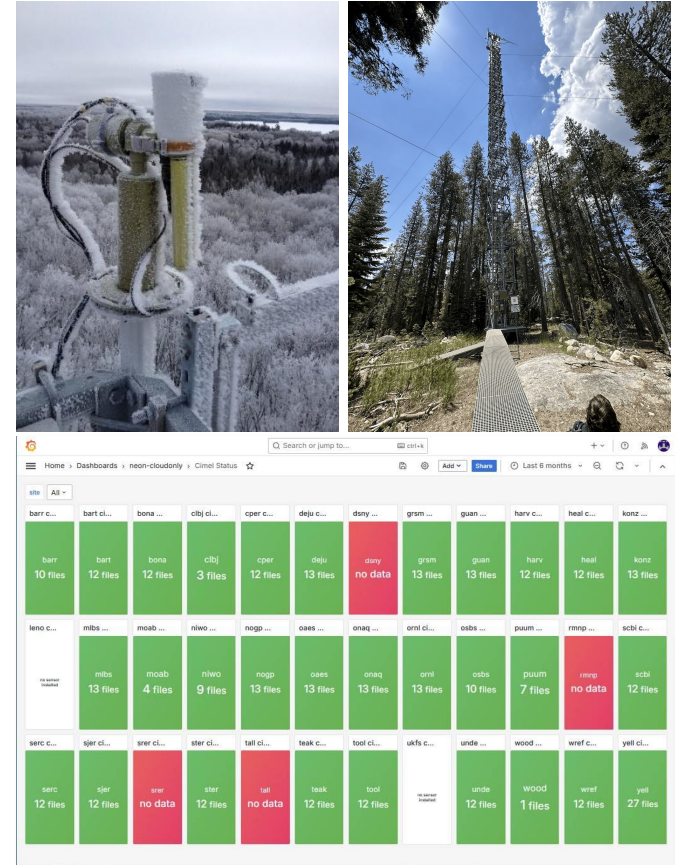
# Aeronet Cimet Support

- **Calibration Lab**

- Standards sent to MLO for traceable Sun calibrations
- Verify our integrating sphere with traveling master
- Perform Pre and Post cleaning Sky and Sun Calibrations Annually
- In-house repairs of robots and sensor heads in collaboration with Aeronet

- **Daily/Weekly Site Monitoring & Trouble Tracking**

- 38 sites including 1 calibration and 1 test tower
- CVAL staff looks after monitoring data through demonstrat
- Field staff also monitors for communication issues; Grafana dashboard for daily quick verifications
- PMs every 2 weeks; though can be deprioritized for other work
- Trouble ticket system to communicate with field staff and get into work prioritization



“... [Cimels] are always a hit when we give tower tours because they are always just working away, taking measurements, and fun to watch. They seem really solid, pretty hands-off sensor- we rarely have issues with them.” – Jill Pyatt, Field Master Tech D05

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