Next-Generation Ecosystem Experiments (NGEE Arctic)

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Use of Remote Sensing Data in NGEE Arctic

NGEE Arctic requires observations for scaling, mapping, and resolving hydrology, snow cover and properties, fine-scale topography, above-ground vegetation structure, LAI, and shrub dynamics, and fire disturbance to inform our next-generation modeling.

- **Imaging spectroscopy (AVIRIS)**: Develop trait maps, spatial above-belowground plant characteristics; inform model inputs and/or benchmarks.
- **LiDAR (LVIS)**: Characterize vegetation structure, surface topography, subsidence, and snow depth.
- **Radar (UAVSAR)**: Surface structure, soil moisture and structure, and subsurface hydrology.

Measurements Useful for ABoVE

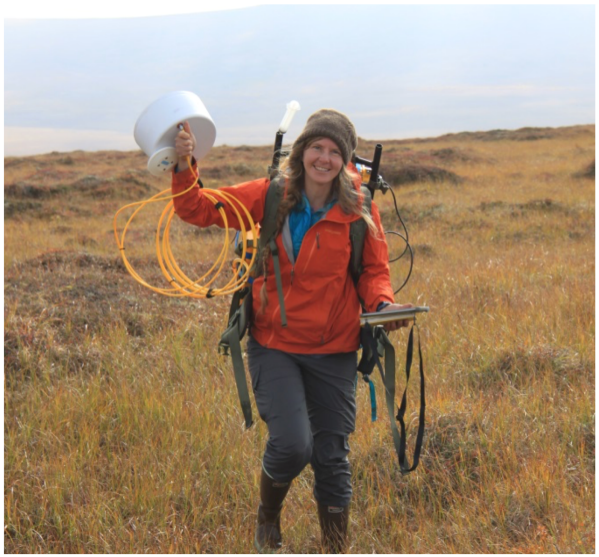
Destructive harvests, leaf photosynthesis, leaf-plant traits, species composition, leaf/canopy reflectance, and phenology.

Snow depth, SWE, soil moisture and surface/subsurface hydrology, soil and permafrost temperature, stream discharge, temperature boreholes, and geophysics.

Surface fluxes (i.e., carbon, water) via EC and chambers.

Energy and surface albedo (e.g., surface temperature, spectral reflectance, and albedo).

High-resolution UAS efforts to map study areas and associated features (e.g., optical imagery and thermal IR).



NGEE Arctic Web-Based Resources

Web Site: http://ngee-arctic.ornl.gov/

Blog: http://ngee-arctic.blogspot.com/

Data Portal: http://ngee-arctic.ornl.gov/data/