NGEE Arctic Leaf Spectral Reflectance, Kougarok Road, Seward Peninsula, Alaska, 2016

Record_id: NGA033

Review and follow the current NGEE Data and Fair-Use Policies prior to using these data (http://ngee-arctic.ornl.gov/content/ngee-arctic-data-management-policies-and-plans).

Summary:

Measurements of full-spectrum (i.e. 350-2500nm) leaf spectral reflectance of Arctic plant species. Data were collected along NGEE sites in the Seward Peninsula, Alaska during the 2016 period.

Please use this citation to reference the data.

Shawn Serbin, Wil Lieberman-Cribbin, Kim Ely, Alistair Rogers. 2019. NGEE Arctic Leaf Spectral Reflectance and Transmittance, Barrow, Alaska, 2014-2016. Next Generation Ecosystem Experiments Arctic Data Collection, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee, USA. Dataset accessed on [insert_date] at https://doi.org/10.5440/1437044.

Associated Publication

Serbin et al., (2019) TBD

Data Characteristics

Point of contact for data	Shawn P. Serbin, sserbin@bnl.gov, +1 631-344-3165
Location	Seward, Kougarok Study Site
Latitude	65.165355N
Longitude	164.821058333333W
Altitude	40-101 m ASL
Data Summary	
Number of records	149
Date from	07/26/2016
Date to	07/27/2016
Missing data	-9999

Data Files

Data files

- NGEE-Arctic_Seward_2016_HR1024i_Leaf_Spectral_Reflectance.csv
- NGEE-Arctic_Seward_2016_HR1024i_Leaf_Spectral_Reflectance.xlsx

The following zip files contain raw data and some processing by-products

- raw_NGEE-Arctic_Seward_2016_HR1024i_Leaf_Spectral_Reflectance.zip

Data Dictionary

NGEE-Arctic_Seward_2016_HR1024i_Leaf_Spectral_Reflectance

column_name	units/format	Description
Site		Barrow, Alaska
Sample_Date	YYYYMMDD	Date data were collected
Spectra_Name		Spectra file name
BNL_Barcode		Sample barcode with BNL prefix
Sample_Barcode		Sample tracking barcode. Use this to link with associated datasets (e.g. leaf chemistry, gas exchange)
USDA_Species_Code		USDA plant species code. http://plants.usda.gov/java/
Spectrometer_GPS_Lat	DD	Latitude reading from GPS on spectrometer
Spectrometer_GPS_Long	DD	Longitude reading from GPS on spectrometer
Instrument		Manufacturer and model of spectroradiometer used
Foreoptic		Radiometerically calibrated fiber optic (when applicable) and foreoptic used (where applicable). LC_RP = leaf clip / reflectance probe
Collection_Units	W/m2/nm/sr	Raw_DN (digital number) OR Radiance (W/m2/nm/sr)
Spectra_Units	percent	The percent reflectance of the sample from 0 to 100%
Spectra_Type		Leaf, canopy, integrating sphere
Reflectance_Type		Relative OR Absolute. Relative = ratio of sample to white reference, Absolute = the same as relative but corrected for the white reference radiance at each wavelength
White_Reference_Standard		Serial number of Labsphere reflectance standard used
Spectral_Resolution	nanometers	Spectral resolution in nanometers
Interpolation_Method		Linear = linear interpolation from 1024 channels to 1nm wavelengths. Spline = spline interpolation from 1024 channles to 1nm wavelengths
Overlap_Handling		Removed = removed detector overlap region.

Overlap_Removal		When removal occurred. During_Collection = when sample was measured. Post_Processing = Removed during post processing step
Overlap_Matching_Type		Reflectance = matched between detectors based on reflectance data. Radiance = matched between detectors based on sample radiance data
Wave_350 to Wave_2500	Percent	Percent reflectance value (0-100) for each interpolated wavelength

Example Data Record:

NGEE-Arctic_Seward_2016_HR1024i_Leaf_Spectral_Reflectance

Note: not all wavelengths shown in example.

Site,Sample_Date,Spectra_Name,BNL_Barcode,Sample_Barcode,USDA_Species_Code,Spectrometer_GPS_Lat,Spectrometer_GPS_Long,Instrument,Foreoptic,Collection_Units,Spectra_Units,Spectra_Type,Reflectance_Type,White_Reference_Standard,Spectral_Resolution,Interpolation_Method,Overlap_Handling,Overlap_Removal,Overlap_Matching_Type,Wave_350,Wave_351,Wave_352,Wave_353,Wave_354,Wave_355,Wave_356,Wave_357,Wave_358,Wave_359,Wave_360,Wave_361,Wave_362,Wave_363,Wave_364,Wave_365,Wave_366,Wave_367,Wave_368,Wave_369,Wave_370,Wave_371,Wave_372,Wave_373,Wave_374,Wave_375,Wave_376,Wave_377,Wave_378,Wave_379,Wave_380

Data Acquisition Materials and Methods

Analytical Tool

R and the R-FieldSpectra processing code (https://github.com/serbinsh/R-FieldSpectra). Additional R processing scripts

Instrumentation	SVC HR-1024i Spectroradiometer, w/ SVC reflectance probe
Data collection	As described in Serbin et al., 2019
Data analysis	As described in Serbin et al., 2019

References

Serbin et al., (2019) TBD

Data Center Contact:

support-ngee-arctic@ornl.gov

Data Access:

Disclaimer of Liability

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