

Periphyton, seston, and phytoplankton collection (DP1.20166.001)

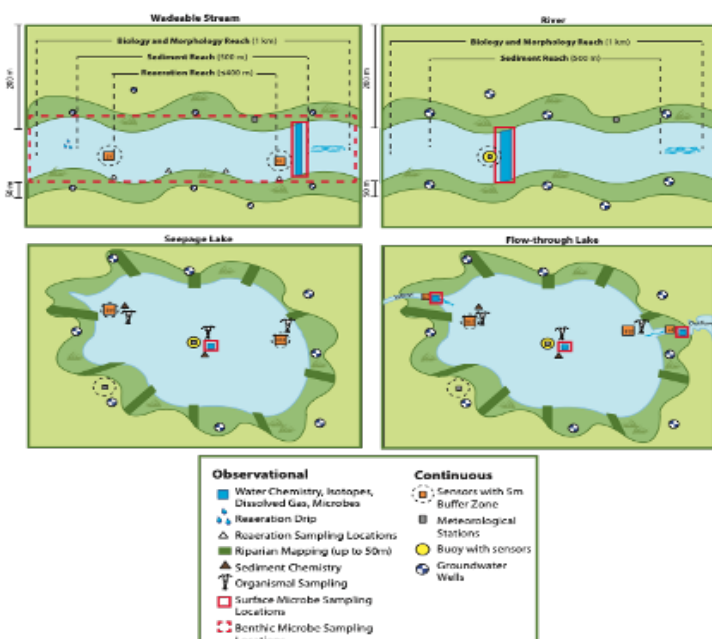
Measurement

Identification, counts, and biomass of microalgae from benthic and water column collections per sample, per volume (cells L⁻¹ and ash-free dry mass g L⁻¹), and per benthic area (cells m⁻² and ash-free dry mass g m⁻²)

Collection methodology

Clip harvest data are collected from 10 locations at all aquatic sites during bout 2 of the biological and sediment chemistry bouts (mid-summer). In lakes and rivers, additional presence/absence data are collected from 10 points during bouts 1 and 3. Points in lakes and rivers use randomized point sampling, and plant samples are collected using a submerged rake along three-1.5 m tows. Clip harvest data are collected near permanent transects using a 0.25 m² (or 0.01 m²) quadrat. In wadeable streams, five of these collections are in the dominant habitat type and five are from the sub-dominant habitat type spaced >10m apart.

Site type	Benthic samples	Water column
Stream	3 in subdominant habitat	1 near sensor set 2 for chlorophyll/AFDM only
Lake	5 in littoral zone	3 near buoy, inlet, and outlet sensors
River	5 in littoral zone	1 near buoy, 2 in river channel



Spatial layout of sampling at streams, rivers, and lakes.

Data package contents

alg_archive: Aquatic algae archived subsamples

alg_biomass: Periphyton, seston, and phytoplankton biomass data

alg_biovolumes: Biovolumes for algal taxonomy

alg_fieldData: Periphyton, seston, and phytoplankton field collection data from streams, lakes, and non-wadeable streams

alg_qualityCheck: Aquatic algae quality data

alg_taxonomyProcessed: Periphyton, seston, and phytoplankton identifications by expert taxonomists – desynonymized

alg_taxonomyRaw: Periphyton, seston, and phytoplankton identifications by expert taxonomists - raw

validation: Description of data validation applied at the points of collection and ingest

variables: Description and units for each column of data in data tables

readme: Data product description, issue log, and other metadata about the data product

EML: Metadata about the data product in Ecological Metadata Language

Data quality

10% of algal taxonomy samples are quality checked by the taxonomist, indicated in qcTaxonomyStatus. Percent similarity (PSc) must be >85% and percent difference in enumeration (PDE) <5% to pass the minimum quality objectives, else data are reconciled.

Standard calculations

Step 1: Convert to algal cells per L and correct for preservative volume when algalParameterUnit = countPerBottle (cells/L)

Step 2: Correct for benthicArea using calculation from Step 1 (cells/m2)

NEON suggests using algalParameter = 'cell density' for the calculations above. See Data Product User Guide for detailed descriptions of algalParameters.

samplingImpractical records in the fieldData table indicate instances where samples could not be collected due to environmental conditions.

Table joining

Table 1	Table 2	Join by field(s)
alg_fieldData	alg_biomass	parentSampleID
alg_biomass	alg_taxonomyProcessed	sampleID
alg_biomass	alg_taxonomyRaw	sampleID
alg_taxonomyProcessed	alg_biovolume	scientificName
alg_taxonomyRaw	alg_biovolume	scientificName

Documentation

[AOS Protocol and Procedure: ALG – Periphyton and phytoplankton sampling](#)

[NEON User Guide to Periphyton and Phytoplankton Collection \(DP1.20166.001\)](#)

Citation

If Provisional data are used:

NEON (National Ecological Observatory Network). Periphyton, seston, and phytoplankton collection (DP1.20166.001). <https://data.neonscience.org> (accessed July 22, 2021)

If Released data are used:

NEON (National Ecological Observatory Network). Periphyton, seston, and phytoplankton collection, RELEASE-2021 (DP1.20166.001). <https://doi.org/10.48443/3cvp-hw55>. Dataset accessed from <https://data.neonscience.org> on July 22, 2021