

Environmental Monitoring

v 0.1.0

How to cite this work: *Seagrass Habitats: MarineGEO Protocols*. (2019) Tennenbaum Marine Observatories Network, MarineGEO, Smithsonian Institution. DOI:

Introduction

The abiotic environment governs where and which species can occupy a given habitat. A number of methods exist for monitoring physical parameters such as temperature, salinity, and turbidity, including: continuously-monitoring sondes and loggers, instantaneous probes, and point measurements using physical equipment (eg, thermometers, refractometers, Secchi disks).

MarineGEO seeks to provide the tools to collect and inherit a variety of monitoring data. Here, you will find materials for reporting point measurements.

If you have continuous data, such as that from sondes or loggers, please contact us for further instructions.

Additional copies of this document, protocols, field datasheets, data entry templates, instructional videos, literature, and more can be found on the MarineGEO protocol website:

<https://marinegeo.github.io>.

Measured Parameters

This protocol quantifies environmental parameters:

- Temperature (degrees Celsius)
- Salinity (psu)
- Turbidity (Secchi depth in m)

Requirements*

*Estimated times will vary by site and conditions

Personnel: 2 people

Estimated Total Time Per Site:

Preparation: 1 person x 1 day

Fieldwork: 2 people x 30 min per location

Sample Post-processing: none

Data processing: 1 person x 1-2 days

Materials:

- ☐ Fixed monitoring station for continuous data (ex: deployed HOBO loggers)

OR

- ☐ Environmental probe or sonde

OR

- ☐ Thermometer
- ☐ Refractometer
- ☐ Secchi disk

AND

- ☐ Field data sheet printed on waterproof paper

Workflow

Preparation:

1. Identify the environmental monitoring strategy that you wish to conduct at your site.
2. If you have access to a system for continuous environmental monitoring at your site, contact marinegeo@si.edu for data processing and submission instructions.

Fieldwork:

1. If you do not access to a continuous monitoring system, plan to take instantaneous environmental data upon arriving at the site, before beginning your survey.
2. An appropriate probe or sonde may be used to collect instantaneous temperature, salinity, and turbidity data. Deploy the probe and record the measurements on the field data sheet. Record any relevant information about your sampling equipment (such as make and model of probe) at the bottom of the field data sheet.
3. If you do not have access to a probe or sonde, temperature, salinity, and turbidity data may be collected separately.
4. Use a thermometer to measure the temperature of the seawater at your site in degrees Celsius. Record measurement on field datasheet.
5. Use a refractometer to measure the salinity of the seawater at your site in practical salinity units (psu, same as parts per thousands or ppt). Record measurement on field datasheet.
6. Use a Secchi disk to measure turbidity at your site. (This may need to be done at a higher tide depending on the depth of your site.) Record Secchi depth to the nearest 0.1-m on your field data sheet.

Data Submission

1. Enter data into provided data entry templates.
2. Scan the completed lab data sheets and save both paper and electronic versions.
3. E-mail data entry file, any photos, and scanned lab data sheets to: marinegeo-data@si.edu.



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