

Beach Seines

v 0.1.3



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Introduction

This protocol provides standardized data on mobile fish and invertebrate communities associated with shallow subtidal habitats like seagrass beds, marshes, and bare substrate. These measures will help characterize local food web and top-down impacts on smaller fauna and primary producers.

Note: Seines can only be taken at shallow subtidal or intertidal sites. Deeper sites with good visibility should instead use [Diver Visual Surveys](#), or deeper sites with poor visibility should consider [Fish Trawls](#).

Additional copies of this protocol, field datasheets, data entry templates, instructional videos, literature, and more can be found on the Seagrass section of the MarineGEO protocol website: <https://marinegeo.github.io/seagrass-habitat>.

Measured Parameters

This assay quantifies mobile fish and invertebrate community structure, measured as:

- Mobile fauna abundance and length (mm)

Requirements*

*Estimated times will vary by site and conditions

Personnel: 3 people

Estimated Total Time Per Site (i.e., all three locations at the site):

Preparation: 1 person x 1 day

Field work: 3 persons x 2 day

Data processing: 1 person x 1 day

Replication: One (1) tow using a beach seine along a two (2) 50-m transects (total $n = 2$ per location)

Materials:

Survey Design:

- ☐ 1 50-m metric transect tape

- ☐ Hand-held GPS unit
- ☐ 2 PVC marker poles (diameter and length as needed)

Fieldwork:

- ☐ 1 beach seine (record dimensions including height, width, and mesh size)
- ☐ Waterproof paper
- ☐ Pencil
- ☐ Clipboard
- ☐ Ruler (mm)

Methods

Fully review this and any additional protocols necessary for the sampling excursion. Address any questions or concerns to marinegeo@si.edu before beginning this protocol.

Preparation:

1. Review the MarineGEO survey design (e.g., [Seagrass Habitats Survey Design](#)) for site selection and setup. This protocol assumes $n = 1$ seine tow taken along a 50-m transect, replicated twice per location.
2. Print field data sheets on waterproof paper.

Fieldwork:

1. Identify the starting and ending points of the 50-m transect.
2. *Before* conducting any other surveys/collections (as to not scare away organisms), open the beach seine fully (one person on either side) and pull it along the full length of the transect (or as far as possible). Record the distance towed.
3. When finished, bring the ends together rapidly to prevent any organisms from escaping.
4. Work through the net, removing and recording the identity of all organisms >5 cm in length. For the first 20 individuals of each species, also record their length (in mm). For fishes, measure

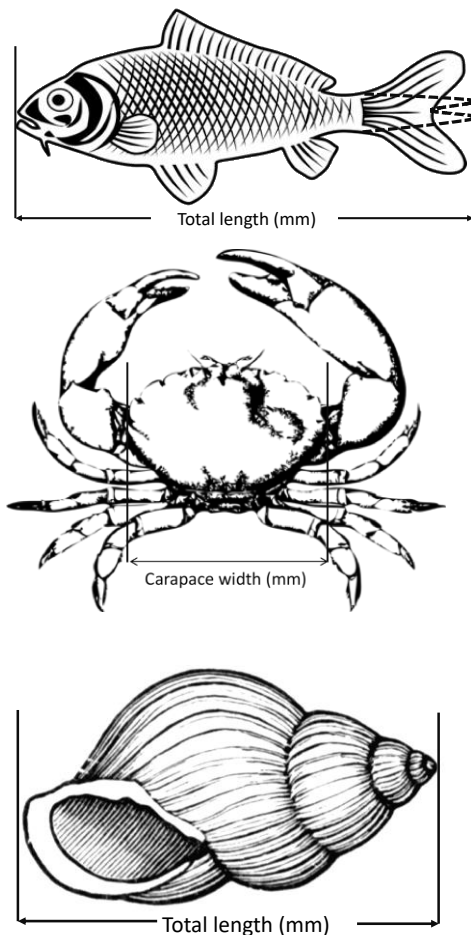


Figure 1. Length measurement for different taxonomic groups that may be caught in the seine.

total length (tip of the snout to tip of the caudal fin); for invertebrates, measure carapace width or total length ([Fig. 1](#)).

5. Photograph any unidentifiable, rare, unique, or interesting species and include the photos in your data submission.
6. Repeat steps 1-5 for the remaining transect.

Data Submission

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