Beach Seins

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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. Additional copies of this protocol, field datasheets, data entry templates, instructional videos, literature, and more can be found at https://marinegeo.github.io/modules/fish-seines.

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.

Measured Parameters

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

- Mobile fauna abundance and length (mm)

Requirements

Personnel: 3 people

Estimated Total Time Per Location ($n = 2$ seines):

Preparation: 1 person x 1 day
Field work: 3 persons x 2 day
Post processing: None
Data processing: 1 person x 1 day

*Estimated times will vary by site and conditions

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 along two transects 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 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.

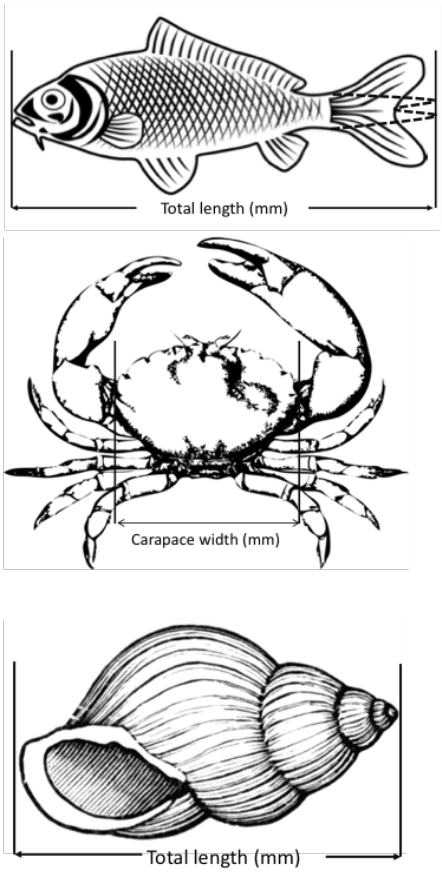

Figure 1: Length measurement for different taxonomic groups that may be caught in the seine.

Data Submission

1. Scan the completed field data sheets and save both paper and electronic versions locally.
2. Enter data into provided data entry template.
3. Use our online submission portal to upload the Excel Spreadsheet (coming Fall 2019).
4. Contact us if you have any questions: marinegeo@si.edu.