MarineGEO

Beach Seines

v 0.1.1

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Introduction

This protocol provides standardized data on mobile fish and invertebrate communities associated with shallow subtidal seagrass beds. These measures will help characterize the seagrass food web and top-down impacts on smaller fauna and the 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.

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

Personnel: 3 persons

Time: Preparation: 1 person x 0.5 hours
Field work: 3 persons x 0.5 days
Post processing: None
Data processing: 1 person x 1 hours

Replication: One (1) tow using a beach seine along a three (3) 50-m transects (total $N = 3$)

Materials Checklist:

☐ 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. Identify sampling scheme. If following the MarineGEO survey design, review the materials here (6 replicates *x* 3 transects = 18 replicates total). Alternately, samples can be taken haphazardly within the bed (if done, record GPS coordinates of each sample)
2. Print field data sheets on waterproof paper
3. Assemble field gear (see Materials checklist)

Fieldwork:

1. Identify the starting and ending points of the 50-m transect
2. Before conducting any other surveys/collections, deploy the beach seine and pull it along the full length of the transect
3. When finished, bring the ends together rapidly to prevent any organisms from escaping
4. Work your way 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; Fig. 1). For invertebrates, measure carapace width or total length (Fig. 2). You may wish to photograph any rare, unique, or interesting specimens you capture. If so, please include the photographs with your data submission
5. Repeat steps 2-3 for the remaining two transects for a total of three tows

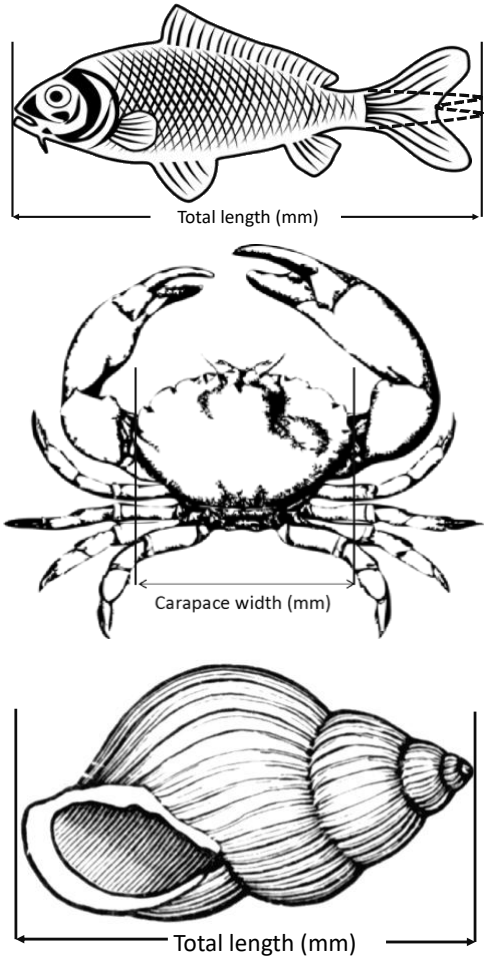

Figure 1: Length measurement for different taxonomic groups that may be caught in the seine.

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