Olympia Oysters

Olympia oysters, the only native oyster species on the west coast of North America, provide unique habitat structure for other organisms. However, their current distribution is greatly reduced relative to their historic distribution. Monitoring Olympia oyster populations helps with planning conservation & restoration actions.

Materials

- 0.25m^2 quadrat
- 50m transect
- Data sheet or field notebook
- Surveyor flags *OPTIONAL for temporarily marking plots*
- Calipers *OPTIONAL if including population demographics module*
- Handheld GPS, or phone or tablet app with GPS recording capability *OPTIONAL - Include if available*

Sampling Summary

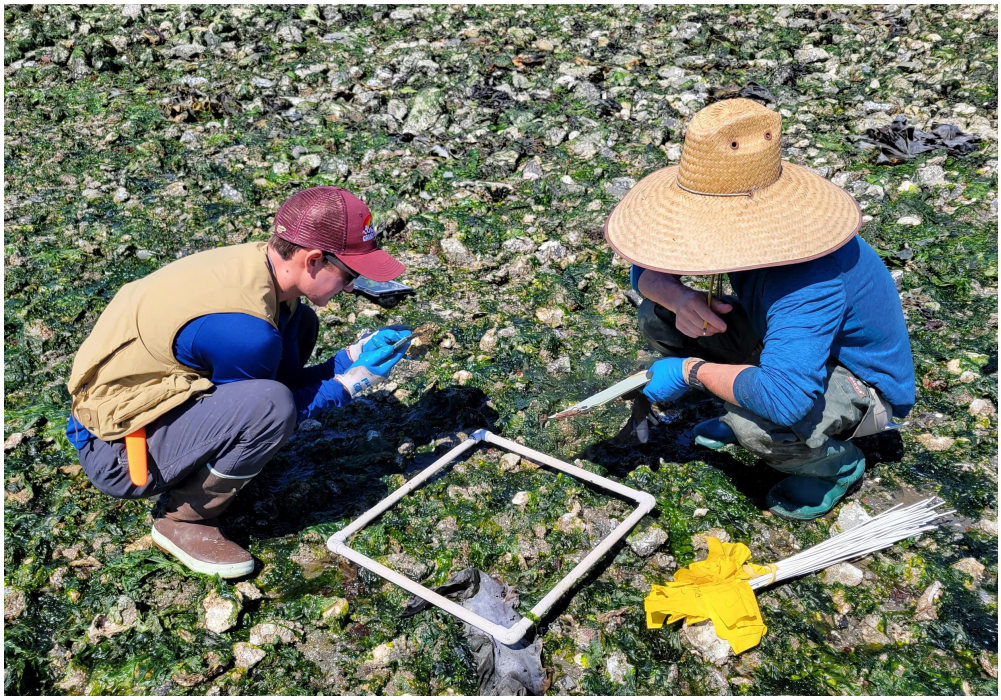
- Identify oyster population extent
- Choose quadrat sampling scheme - haphazard or transect
- Count number of Olympia oysters per quadrat
- Measure shell heights of first 10 oysters *OPTIONAL- Do if including population demographics module*

Haphazard

- Measure survey area
- N=10 (minimum) haphazardly placed quadrats within survey area

Transect

- 50m transect parallel to shore between 0' and -2' MLLW
- N=10 (minimum) standard spaced random start quadrats



Methods - Setup

Arrive at the site when the tide is approximately at MLLW. Identify the Olympia oyster population extent.

Transect setup

Lay out a 50m transect parallel to the shoreline, targeting the Olympia oyster population if present or targeting a tidal elevation between +1 and -2 ft MLLW. Position your first quadrat at 2.5m along the transect. If a handheld GPS is available, use a handheld GPS to mark the first and last quadrat position. Space subsequent quadrats 5m apart, alternating sides of the transect tape as you go. As time permits, you may conduct additional transects at a different elevation or sample additional quadrats along your current transect.

Haphazard setup

If sampling a target area (i.e. a project footprint) or unable to use the transect method, you can use a haphazard sampling approach. First, establish the area of interest. Then, without looking, toss the quadrat generally within the area. Record data for that quadrat, and repeat the toss. Use a surveyor flag to mark quadrat locations to avoid resampling the same spot. If a handheld GPS is available, record the GPS position of each quadrat.

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Scale of Effort

$ Cost – low, simple materials, data all field based

$ People – low, 2-3 people can survey and record data, if additional people are available, teams can be formed so that surveyors can finish faster and/or collect additional samples

$$ Fieldwork time – medium, several hours on one low tide day

$$ Processing time – medium, data must be entered to a digital spreadsheet

$$ Technical experience – medium, ability to identify oysters to species and use calipers [OPTIONAL]

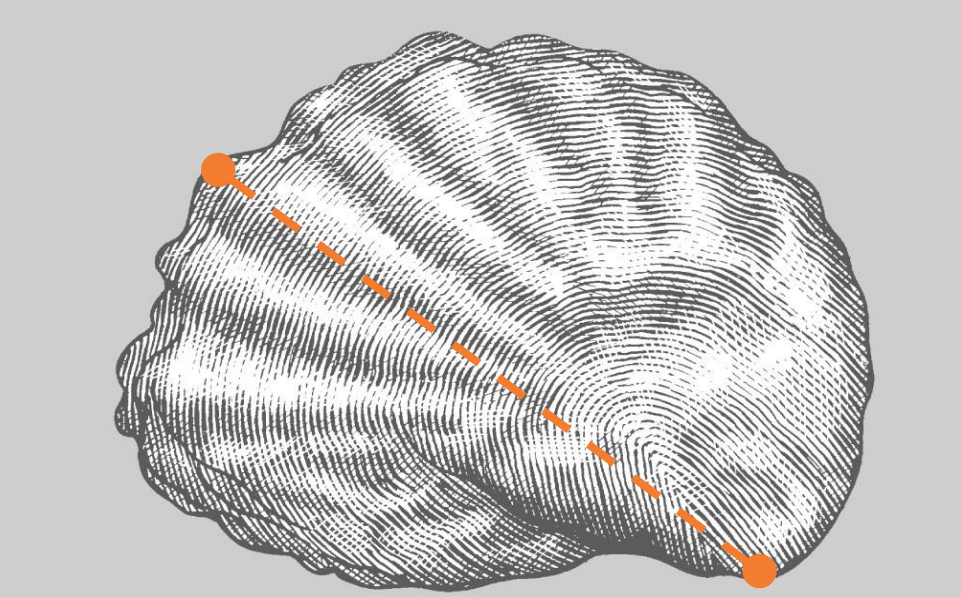
Additional Resources

PSRF Olympia Oyster Field Guide

WDFW Plan for Rebuilding Olympia Oyster Populations

A cluster of live Olympia oysters

Suggested Citation:
Puget Sound Restoration Fund, 2022



shell height = distance from umbo to furthest edge of the shell

Methods - Quadrat Samples

For each quadrat, count the number of live and dead Olympia oysters present. For dead, count shells that are articulated (both valves present) but open/empty. Optional: count live and dead Pacific oysters. If uncertain of oyster species ID, record "unknown oyster" for those observations. If doing the optional shell height survey, record shell height (distance from umbo to furthest edge of the shell, see image above) for the first 10 oysters encountered per quadrat, rounding to the nearest mm. If no Olympia oysters are found within your first 10 quadrats, lay a new transect and survey additional quadrats as time allows. Record your final survey area for each sample.

Data to record in the field

Date, survey time, surveyor name/contact, site name, survey method (haphazard or transect), survey area (in m^2, if using haphazard), GPS position, species, tidal elevation (if known), sample number, sample lat & long (WGS84), oyster counts, shell heights of first 10 oysters [OPTIONAL]. Photographs or qualitative notes and observations about the site (substrate type, beach slope, vegetation, predator presence/absence) are helpful but not required.

Processing

Data must be entered into spreadsheet.

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