

Beach Wrack

Characterizing beach wrack provides valuable information on the habitat of the upper beach and marine-terrestrial connectivity. This may change depending on shoreline armoring, source material alterations, and winter storms. Beach wrack provides food and shelter for many invertebrates, and foraging habitat for shorebirds.

Materials

- 50 m transect tape
- 32 x 32 cm pvc quadrat, subdivided with string into 25 6 x 6 cm small squares

Sampling Summary

- 50 m transect parallel to shore
- 0.1 m² quadrat (32 x 32 cm)
- N=10 random quadrats per transect
- Transects at most recent wrack line and higher elevation older wrack line
- Measure % cover of algae, eelgrass, terrestrial plants, and trash

Scale of Effort

\$ Cost – low, simple materials and data are all field-based

\$ People – low, 2-3 people can establish transects and record quadrat data

\$ Fieldwork time – low, 1 day, once a year in September when wrack lines are exposed

\$ Processing time – low, entering field data into computer format

\$ Technical expertise – low, identification of major wrack types

Additional Resources

Reports that have used this method:

[Dethier et al. 2016](#)

[Heerhartz et al. 2014](#)

[Sobocinski et al. 2010](#)

Other methods that require a larger scale of effort and more technical expertise: methods in [Heerhartz et al. 2014](#) that measure biomass of wrack



Methods

At ten random points along a 50 m transect parallel to shore, place a 0.1 m² quadrat on the beach surface and conduct a visual estimate of the percent composition of algae, eelgrass, terrestrial plant material, and trash. Divide the quadrat with string into 25 6 x 6 cm small squares to facilitate these estimates – each square equals 4%. If possible, specify the algae type (e.g., red, green, brown, or species). Establish two transects: (1) at the most recent high tide line that has fresh wrack deposition, and (2) just above MHHW in older wrack. The most recent high tide line will target mobile wrack, whereas the higher elevation sample will target the more stable wrack layer. If there is a bluff or shoreline armoring, sample the elevation at the base. Sample in September as it is typically a period of high wrack accumulation, and on an ebbing tide when the upper beach +6' MLLW and above is exposed.

Data to record in the field

Date, time, site name, transect elevation, sample number, beach wrack data. It is advisable to take a digital photo of the transect and of some example quadrats for documentation.

Processing

Enter the field data into computer spreadsheets. The percentages for each wrack type can be analyzed separately, or combined for a percentage of total wrack cover. The different wrack types give information on the source material available (e.g., riparian vegetation for terrestrial sources), and the amounts that deposit on the beach.

Suggested citation: *Shoreline Monitoring Toolbox*. Washington Sea Grant.

Website: wsq.washington.edu/toolbox