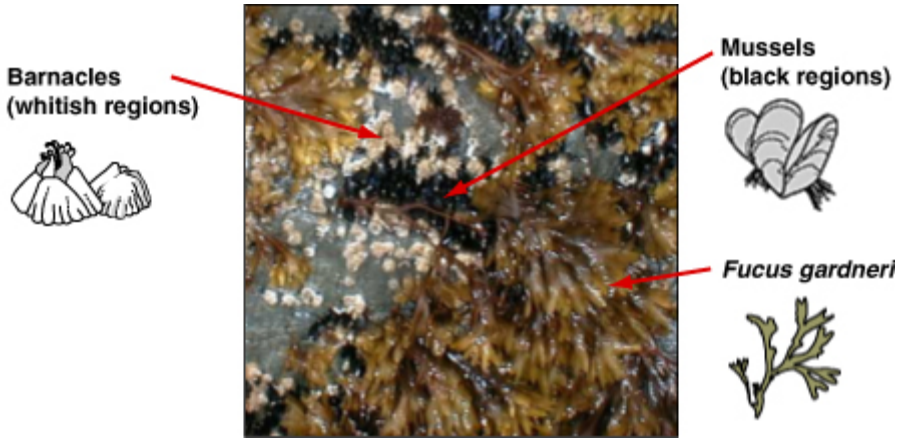
Mearns Rock Field Guide

This field guide will help you recognize the species in your quad, and estimate their percent cover.

Recognizing Marine Life

Below is an example photo showing some representative patches of *Fucus*, barnacles, and mussels.



Rockweed *(Fucus gardneri)*

Fucus (pronounced like mucus) is a type of brown algae that grows in the middle- to upper-intertidal zone (the higher part of the tidal flat) of cold ocean waters. The body of the alga is composed of flattened "branches," some of which end in swollen receptacles that house reproductive parts (eggs and sperm). (*Fucus* is sometimes called "popweed." Can you guess why?) The holdfast, at the base of the alga, attaches it to the rocks on which it lives. Because *Fucus* is sometimes out of water for hours at a time when the tide is low, it has a thick "skin" that helps it keep its moisture, and it makes a sticky substance to keep from losing water. In late spring and summer, in locations where *Fucus* grows well, it may nearly cover all other intertidal organisms!

Mussels (*Mytilus trossulus*, the Pacific Blue mussel)

Mussels are bivalves (their bodies are enclosed by two shells, or valves) that can be found firmly attached to rocks, floats, and pilings. A mussel stays attached to the substrate by its byssus, a collection of tough, leathery threads of organic material secreted by the mussel. Adult *M. trossulus* range from 3 to 10 cm in length and can vary considerably in color. Generally, the shell is dark blue-

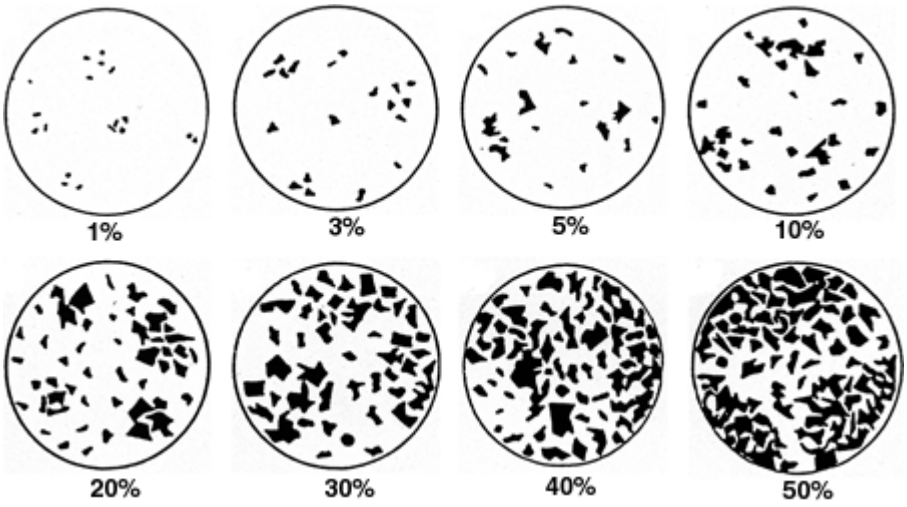
black or brownish black, but the shell of young mussels is often brown. Like many other bivalves, mussels are filter feeders, pulling water into their body chambers with their inhalent, or intake, siphon (the larger, frayed-edge gape on the upper edge of the mussel), and then forcing it out the exhalant, or exhaust, siphon (which is smaller and has a smooth edge). Dense masses formed by mussels provide protection and other biological necessities for many organisms, such as small shrimp, amphipods, and polychaete worms. Mussel beds also serve as a substrate to which barnacles may become attached.

Barnacles *(Balanus glandula)*

Barnacles are tiny crustaceans (animals related to crabs, lobsters, and shrimps) that occupy volcano-like shells. They colonize rocks, pilings, and even boats, by attaching masses of their whitish-colored shells to the substrate. The shell of B. glandula consists of a number of overlapping plates. The barnacle controls the opening at the top of the shell by moving these plates. A large B. glandula is about 1.5 cm across, with its diameter about the same as its height. In large masses, you may notice that the barnacle shell is more cylinder-shaped than volcano-shaped. (Why do you think that is?) The barnacle feeds by using six feather-like appendages, called cirri. As the cirri rapidly extend and retract through the opening at the top of the barnacle, they comb the water for microscopic food.

Percent Cover Chart

Use this chart as an aid for estimating the percent cover of a particular form of marine life in the quadrat you are observing. Think of the black areas in the chart as representing one of the three marine life forms you're studying.



References

Kozloff, Eugene N. 1973. Seashore Life of Puget Sound, the Strait of Georgia, and the San Juan Archipelago. Seattle, WA: University of Washington Press. 282 pp.

Dunn, R., S. Klinesteker, and S. Moran. Santa Cruz *Fucus* Focus: *Fucus gardneri*. December 15, 2001.