Taxonomic Groups

This card provides background information on the major MIMIC taxonomic groups, including notes on life history, anatomy, and taxonomy.

Crustaceans

Crustaceans are a subgroup of animals within the **Arthropoda** – the largest animal phylum that also contains insects, arachnids, and other groups. Most crustaceans are **free-living** (such as crabs, shrimp, lobsters, and amphipods), but some live attached to substrates (such as barnacles). Their bodies are made up of segments with doubly branched pairs of appendages. Small crustaceans serve as an important food source for larger marine animals, while larger crustaceans are themselves predators.

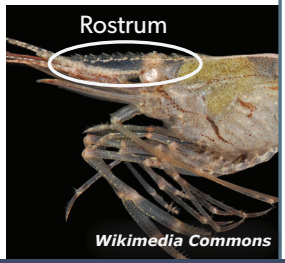
Crabs

MIMIC participants monitor for two **crabs**, both belonging to the infraorder Brachyura, or the true crabs. This group is characterized by a reduced "tail" (abdomen) which is tucked under the cephalothorax (fusion of the thorax and head). A **carapace** covers nearly the whole body. To differentiate the region's crabs, take note of the **shape** of and **number of spines** on the carapace.


Lexie Neffinger

Shrimp

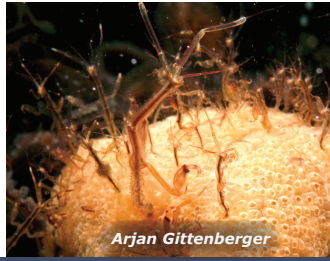
Shrimp are decapod crustaceans that belong to one of three "shrimp-like" taxonomic groups: Dendrobranchiata, Caridea, and Stenopodidea. Unlike crabs, shrimp have long "tails" (abdomens) that help them swim and dart backwards. MIMIC participants monitor for one shrimp in the family **Palaemonidae**. These shrimp have a long pair of antennae and a serrated **rostrum**.



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Amphipods

Amphipods are an order of crustaceans with bodies that are compressed from side to side. They are often mistaken for tiny shrimp. MIMIC participants monitor for one amphipod in the **skeleton shrimp** family (Caprellidae). They have a long body, large front claws, long antennae, and hind legs that cling to surfaces. Caprellids are often **highly animated** and can be seen "waving" back and forth in large groups.


Arjan Gittenberger

Taxonomic Groups

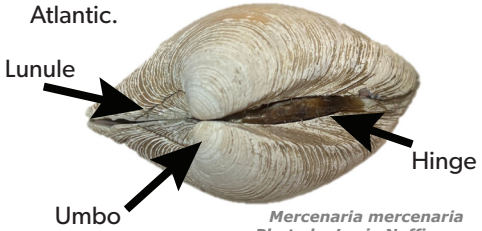
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Mollusks

The **Mollusca**, known as mollusks, are the second largest animal phylum after the Arthropoda. There are eight major groups, the largest of which are the **gastropods** (snails, slugs, whelks, etc.), followed by the **bivalves** (clams, oysters, scallops, etc.). Mollusks have a soft, muscular body that is covered by a **mantle**. The mantle can secrete compounds that help create a shell, as in bivalves, or can form the dorsal (back) surface of the animal, as in nudibranchs.

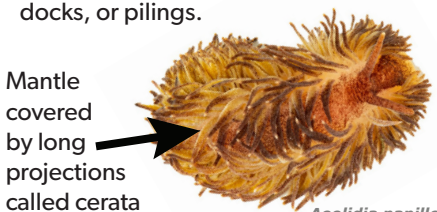
MIMIC participants monitor for two groups of mollusks:

- **Bivalves,** or shellfish, are filter-feeding mollusks with a body contained within two **shells** joined by a hinge. Some species attach to substrates directly or with strong (byssal) threads. Others burrow into mud or sand using a muscular foot. Many species are commercially important in the Northwest Atlantic.



Mercenaria mercenaria
Photo by Lexie Neffinger

- **Nudibranchs,** or sea slugs, are gastropod mollusks that lack a shell. The **mantle** is often colorful, patterned, and/or marked with projections that can vary in shape and size. MIMIC participants may find nudibranchs associated with substrates in the rocky intertidal or subtidal, tide pools, docks, or pilings.



Aeolidia papillosa
Photo by Alex Shure

Anemones

Anemones belong to the phylum Cnidaria, a group that also includes jellyfish, hydroids, and corals. They use **tentacles** with stinging cells (nematocysts) to feed on invertebrate prey. When out of the water, anemones retract their tentacles and can look like small lumps or gum drops. MIMIC anemone species are found growing in clusters close to the water surface on docks or may be seen attached to surfaces in tide pools or in the subtidal.

Native *Metridium senile* anemones on the side of a floating dock.

