

Sammye's Intertidal life handout

Anemones – Phylum Cnidaria

They are related to jellyfish. (stinging cells)

Aggregating anemones: They are a carnivore with a toothless mouth surrounded by stinging tentacles. These animals capture their food by stinging their prey and stuffing them into their mouth. When finished eating, they spit out the remains. The aggregating anemone can reproduce by ripping itself in half to form a twin. (It can clone itself!!) The twin remains attached to its parent and both continue to divide until a colony of many anemones is formed. They can also reproduce sexually. If colonies come too close to one another, they will fight with each other to retain space between them. Dueling nematocysts!

Christmas anemones: They are usually colored red and green but will sometimes morph into solid colors. They are larger in size and can live to be 50 years old or more.

Urticina: These are anemones that we see at Rosario that are simply non-descript in color. They can sometime swim away from a predator. Only a few species can swim.

If you touch an anemone and they close around your finger, they are actually shooting barbed stinging cells (nematocyst) into your finger. It will not hurt your finger as the skin is too dense to penetrate. However, if you then touch your finger to your eyes, nose or mouth, it will sting. Mucus membranes are very thin and therefor can be penetrated by the stinging cells. They are opportunistic feeders and depend of the tide to bring food to them.

When the tide is out, anemones hold water in their body so that they can survive until the tide comes back in. If they lose their water, they will dry out and might not survive.

Jellyfish – Phylum Cnidaria

Lion's Mane (Sea Blubber, Sea Nettle): The lion's mane jelly is the largest in the world and has stinging cells (nematocysts) on its tentacles. This is a beautiful jelly that you do not want to touch even when stranded on the beach. The nematocyst is just a part of their body and can sting even if the animal is dead.

It has a beautiful bell shape with long tentacles that can reach 10 feet or more. Human's reaction to the stinging cells range from mild to blistering or worse. They feed on small fish, crustaceans and other animals it comes into contact with. They are usually a beautiful red, yellow or rust color with flowing blubber on the underside.

Egg yolk (Scrambled egg): This is a bell shaped jelly that has a yellowish center that reminds you of a scrambled egg or egg yolk. Sometimes we find them in the tide pools or on the beach. They have stinging cells on their tentacle but their sting is not as powerful as the lion's mane.

Moon Jelly: It is a bell shaped jelly that is found in our waters and sometimes stranded on beaches. It has four horseshoe shaped circles on its bell and short tentacles. Their nematocyst can sting our mucus membrane or cause a rash in some people.

Most jellies live about one year or one season. Sea turtles love to eat jellies. "We do not have sea turtles."

Crabs – Phylum Arthropoda

(Many jointed legs) Crabs are the scavengers.

Hairy and purple shore crabs: These small crabs have a square shell (carapace) and can be many different colors when tiny. The hairy shore crab has tiny hairs on its legs while the purple does not. However, the purple shore crab has freckles on its claws. You can tell the males from the females by looking at the bottom of the crab (the abdomen). The male's abdomen has a very narrow pyramid shape and the females have a wide fan shape. The female carry eggs under the abdomen and need lots of room.

These crabs live in a specially chosen neighborhood. Picking them up and moving them is like taking you out of your home and leaving you in New York City? If they are put into a bucket of water, they use up all of the oxygen, and then die. It is best to leave all animals where we find them. Crabs have gills that they use for breathing but can be out of the water for short periods of time.

Hermit crabs: There are a number of different species of hermit crab. They have a hard skeleton on the front of the body, one the pincers and legs, but have a very soft rear end (abdomen). They protect their abdomen by living in cast off snail shells. As they grow bigger, they usually trade their small shell for an empty larger one. Hermit crabs carry their eggs in their shell.

The shore and hermit crabs wage war from one side of the tide pools to the other. They are really fun to watch.

Kelp, sharp nosed, and decorator crabs: These crabs have pointed noses and longer legs relative to their body.

Crab Molts: Sometimes we find the beach littered with what looks like dead crabs. However, it is usually the empty shells of crabs that have molted (shed its old shell). When the crab has grown too large for its shell, it pops open the back hatch on the carapace, pulls its whole body out, and leaves the old shell. The new shell is very soft and the crab vulnerable to predators. Over the period of days or weeks (depending on the size of the crab), the new shell hardens for protection. During this time, the crab hides for protection.

It is illegal to harvest a Dungeness or Red rock crabs that have a soft shell. They must also be a certain size for harvesting.

Barnacles-Phylum Arthropoda - Subphylum Crustacea

Barnacles are related to Arthropoda or “jointed limbed animals” They also molt. I find the barnacle to be one of the coolest animals on the beach. They live with their head glued to the rocks, open their trap doors, and reach out with their feet/legs (cirri) to eat. Their feet/legs look like a fan or an eyelash reaching out into the water to gather food. They eat plankton and dead bits of seaweed. They build their own house that has six walls and four doors. To keep from drying out, they hold water in their house while the tide is out. The skin on their body and feet/legs does not grow with them. As they grow larger, they shed the skin and kick it out the door. We see the molt floating in the water all the time. Juvenile barnacles hatch from eggs inside the house. When they hatch they are kicked out the door by the parent in the form of zooplankton. The young spend about a month floating in the water before settling down on a rock next to other barnacles. The adult barnacles release a scent “I tell the kids

that maybe it smells like chocolate chip cookies” that attracts the young. After settling, they build their own hard house. As they grow larger, they can dissolve one wall (plate) at a time and rebuild it farther out. They do this until they reach their adult size.

Limpets and Chitons – Phylum Mollusca (Mollusks)

This group of animals has a soft body (a soft foot) and usually a hard shell, but not always!

Limpets are small and snail-like with dome shaped shells. They are found holding tightly to rocks from the splash zone high up on the beach right down into the water. They move on their foot like other snails and have a mouth with a radula (a tongue with teeth on it!) for scraping algae (seaweed) off the rocks. Limpets have a homing instinct. They leave their resting spot to eat then come right back to the same resting spot.

Chitons have 8 plates (shells) on their back and one foot on the bottom with a radula. Most chitons eat seaweed, but some eat other animals they scrape off the rocks. They prefer to eat at night when it is cool and dark.

Limpets and chitons suction to the rocks with their lips and lick the algae off with their tongue. So if you try to pull them off of the rocks, it would be like ripping their lips. Oh no!! No lip ripping on the beach, please.

Sea Slugs – Phylum Mollusca (Class Gastropoda)

Yuck!! Slugs, right? No so with our beautiful sea slugs. They are one of the most colorful group of animals in our waters. These critters have a soft foot with a radula for eating, too. However, they do not have a hard covering like limpets and chitons. Some eat sponges while the shaggy mouse feeds on sea anemones. It eats the tentacles, stingers and all. The stingers do not sting the shaggy mouse, but migrate to the ends of the shaggy projections on its back (cerata). If a predator tries to eat the shaggy mouse, it gets stung by the anemone’s stingers? Amazing!!!

24 Key TAXA

Macroflora – Seaweeds and Plants

Ulvoids	<i>Ulva</i> species
Kelp	<i>Nereocystis</i> , <i>Laminaria</i> , and <i>Alaria</i> species
Rockweed	<i>Fucus</i> species
Sargassum	<i>Sargassum muticum</i>
Red blades	<i>Mazzaella</i> , <i>Porphyra</i> , and <i>Mastocarpus</i> species
Red filaments	<i>Polysiphonia</i> , <i>Ceramium</i> , and <i>Odonthallia</i> species
Eelgrass	<i>Zostera</i> species

Animals by Phylum

Cnidaria – Sea anemones

Anthopleura anemones	<i>Anthopleura elegantissima</i> , <i>A. artemisia</i>
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Mollusca - Mollusks

Chiton	<i>Mopalia</i> species
Limpet	Lottidae
Whelk	<i>Nucella</i> species
Periwinkle snail	<i>Littorina</i> species
Shaggy mouse nudibranch	<i>Aeolidia papillosa</i>
Opalescent nudibranch	<i>Hermisenda crassicornis</i>
Blue mussel	<i>Mytilus trossulus</i>

Arthropoda – Barnacles, crabs, and isopods

Barnacles	<i>Balanus</i> , <i>Semibalanus</i> , and <i>Chthamalus</i> species
Red rock crab	<i>Cancer productus</i>
Shore crab	<i>Hemigrapsus</i> species
Hermit crab	<i>Pagurus</i> species
Isopods	<i>Idotea</i> and <i>Gnorimosphaeroma</i> species

Echinodermata – Sea stars

Purple sea star	<i>Pisaster ochraceus</i>
Mottled sea star	<i>Evasterias troschelii</i>

Chordata - Fishes

Tidepool sculpin	<i>Oligocottus maculosus</i>
Gunnels/Pricklebacks	Pholidae/Stichaeidae