



Species Spotlight

Common Sea Star

Asterias rubens

June 2016

What is it?

The common sea star is a five-armed *echinoderm* that grows between 10 to 30 cm across, though it rarely can stretch to over 50 cm. Orange to brown in color, it is found in rocky and gravelly areas and tidal pools where it feeds on molluscs and other bottom-dwelling invertebrates. A strong sense of smell helps this sea star to locate its prey and to avoid predators. Its primary prey in these parts are *bivalves* such as mussels and clams. Once in the sea star's sticky grasp, their shells are pried apart by the suckers on the star's tube-feet. When a small gap is opened, in a don't-try-this-at-home manoeuvre, the sea star inserts its stomach inside the shell and, a bit gruesomely, begins digesting the mussel or clam.

Why is it important?

Sea stars are key predators of invertebrates, especially mussels, and their feeding activity helps to keep the populations of these and other bivalves in check. When sea star populations decline, dramatic declines of other species can also occur as what was a relatively diverse intertidal ecosystem skews to a mussel-dominated one. Climate change could already be effecting the health and distribution of many sea star species, which is a trend that is expected to continue into the foreseeable future.

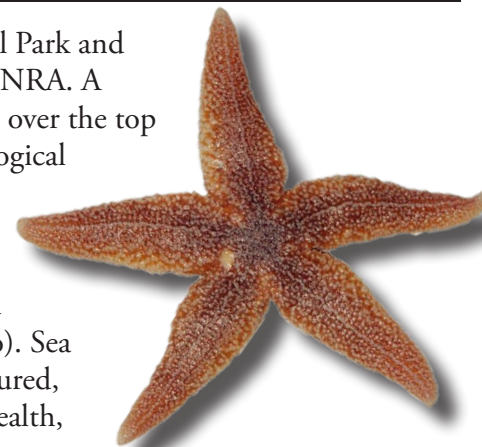
How does NETN monitor it?



organisms within fixed pools over time. NETN monitors conditions at nine rocky intertidal sites with three tidal pools

Unlike some west coast sea stars, New England species are rarely seen out of the water. NETN monitors these species in intertidal pools that are low in the intertidal zone. The data is not intended to quantify overall densities within a site, but rather to quantify the change in abundance and size of these

each in Acadia National Park and Boston Harbor Islands NRA. A transect-tape is laid out over the top of a tidal pool and biological technicians carefully traverse the length of the tape collecting sea stars that fall within 1-meter of it (see photo). Sea stars are counted, measured, inspected visually for health, and placed back in the tidal pool they came from.



***Sea star? Don't
you mean starfish?***

Contrary to what the long-popular common name may lead you to think, "starfish" are not related to fish at all, but are a kind of echinoderm (ee-kine-o-derm). Other echinoderms include brittle stars, sea urchins, sea cucumbers and sand dollars.

How is it doing?

In 2011, the most recent outbreak of sea star wasting disease - a condition which essentially turns the bodies of many sea star species into a gooey mess, began devastating sea star populations along the west and east coasts of North America. A few years before the disease was noticed, sea stars experienced an exponential population increase off parts of the east and west coasts. This may have contributed to the outbreak as rapid population increases often make animals more susceptible to disease. The common sea star though seems to have been largely spared by this most recent outbreak and animals being found in Acadia, Boston Harbor Islands and other east coast shorelines appear mostly to be healthy. Other species seem to be recovering slowly as well and some scientists have speculated that the worst of this outbreak may be over for now as those most susceptible to the disease have likely died off. What caused the disease is still uncertain, though some researchers think that the pathogen may have been in the water for decades and was triggered when changing environmental conditions, namely - warmer ocean water, reduced sea star immunity.

For more information

See NETN's rocky intertidal monitoring webpage for more information including briefs, intertidal site maps, and detailed monitoring methods.

<http://go.nps.gov/netn>