

Atlantic Rock Crab

Cancer irroratus

Class: Malacostraca
Order: Decapoda
Family: Cancridae
Genus: Cancer

Distribution

They inhabit the Atlantic Ocean and are extensively distributed along North America's east coast.

Habitat

Rock crabs live over a large depth range, from well above the low tide line to as deep as 790 m.

Food

They are opportunistic feeders consuming a wide assortment of items including algae, marine worms, gastropods, mussels, and various crustaceans including hermit crabs.

Reproduction

This (first) occurs when they have reached a certain size with their reproductive organs well developed. Females are at a body width of 49 mm and males at 62 mm. Males court females who have recently moulted.



These are year round residents of Burntcoat Head waters.

Rock crabs range from Labrador and Newfoundland south to Miami, Florida. They are now being reported in Icelandic waters. In Canada they are quite common along the east coast. They are abundant in the Gulf of St Lawrence, the Bay of Fundy and coastal Nova Scotia as well as other areas of the Maritimes.

Off Nova Scotia and in the Bay of Fundy they are commonly found in water less than 20m deep, with inshore areas of depths ranging from 5 to 20 m. In its southern-most range this species is often found in deeper water. They live on a variety of substrate types including rocky and loose material. Some prefer muddy or sandy bottoms, especially smaller crabs.

The diet of juvenile and adult rock crab also includes scallops, snails, sea urchins, brittle stars, and shrimp. Larger adult rock crabs are known to prey on small lobsters and visa versa, lobsters prey on rock crabs. Larvae are considered omnivorous planktivores, feeding on minute particles of various organisms, both animal and vegetable in content.

When females moult the new shell takes 2 to 3 months to fully harden. It is during this time mating takes place. Males are both attentive and protective towards the soft-shelled female. During copulation the male will hold on to the female as he transfers his sperm to her. He does this throughout the entire mating sequence. The presence of a seminal receptacle in the female indicates that fertilization may be internal. She releases eggs from her ovaries which become fertile when coming in contact with his sperm. Egg-laying usually occurs within a few days of mating. She attaches the eggs to her abdomen and carries them around for several months as they further develop.

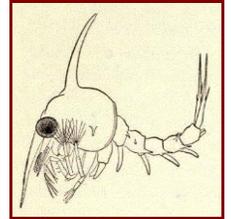


Development

Depending upon the female's size the number of eggs produced can range from about 45,000 to over 500,000. These hatch out into the water column as larvae (zoeae). They go through several stages of growth and development (moult) until they become megalopa, the final larval stage and metamorphose into tiny little crablets.

Larvae are planktonic in their lifestyle. They live close to the surface, free swimming, and feeding on plankton. After the larval stage is complete they metamorphose into tiny crabs which convert to a benthic lifestyle. They drop down to the seabed and gravitate towards the shoreline. They are now in their first instar – a stage of growth in young crabs. They will moult in several weeks to a larger second instar. Within each succeeding moult the interval between increases. As juveniles they go through several instars before reaching adulthood and sexual maturity. In the first two years, both female and male juvenile rock crab will grow from 1.4 to 4 cm in carapace width. However, after the second year, males typically grow faster than females.

Zoea



Characteristics

The carapace is a yellow-brown in colour with purple and crimson markings on top and a pale yellow underneath. It is broad and oval in shape. The surface is smooth in comparison to other crabs, as are the claws. Males grow to a carapace width of 15 cm and females to 11 cm.

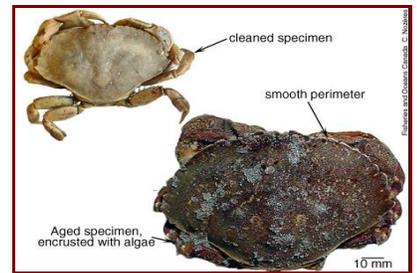
A key identifying characteristic of the rock crab is the set of nine teeth on each side of the front region of the carapace. These are smooth and look like ridges. Its eyes are round and located on thick short stalks. Like most crabs, the rock crab has five pairs of walking legs, the first pair is a set of pincers or claws which are used for feeding and defence. Atlantic rock crabs are estimated to live for up to eight years, and at this age may weigh as much as 0.25 kg. They are farmed at six years of age.



Adaptations

Their lifecycle is strongly temperature dependant. They are distributed in specific patterns with respect to temperature, salinity, light, gravity, pressure, substrate, depth, and carapace size. The relative effect of each factor varies with age and time of year.

These crabs can tolerate a wide range of salinity and temperatures, however they do have preferences. Those in northern habitats have a preference for shallow waters; this includes Canadian populations. They tend to remain inshore. Those in habitats further south migrate in late spring to deeper waters. Young crabs up to a certain carapace width also prefer to remain in shallow, less turbulent waters with muddy or sandy substrates. Others prefer rocky bottoms with numerous hiding places.



Status/Threats

The Department of Fisheries and Oceans monitor this species. Larvae and young crabs are heavily predated by a variety of organisms including lobsters, fish and other crabs.

Rock crabs are a major component of the diet of lobsters. They are a by-catch of lobster fisheries, they are also caught and used as bait, and are now fished for commercial purposes. Fishery regulations are in place to ensure that crab populations do not become depleted thus impacting the lobster industry. Guidelines are in place. There is a legal size allowed for adult males. Females cannot be landed. In lobster fishing areas dockside monitoring programs are in effect.



Sightings in Nova Scotia

These occur in all coastal areas.