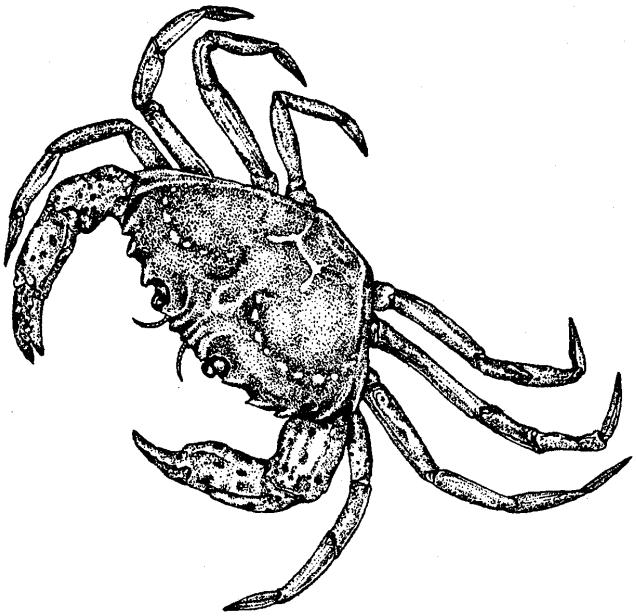
NON-INDIGENOUS SPECIES FACTS

Green Crab



What is the Green Crab?

The European green crab *(Carcinus maenas) is* a small shore crab (adults measure about 3" across) whose native distribution is along the coasts of the North and Baltic Seas. Although known by the common name of green crab, color is not its distinguishing feature. The shell (carapace) color can vary from dark, mottled green to orange or red. The crab is an able and effective forager-capable of learning and improving upon its food-gathering skills. Studies have shown that the green crab is quicker and more dexterous than most crabs, and can open bivalve shells in more ways than other crabs. One adult crab reportedly can eat 40 half-inch clams each day and can devour crabs as large as itself. Green crabs also prey on numerous other organisms-making these crabs potential competitors for the food sources of native fish and bird species.

The recent arrival of the green crab on the U.S. West Coast is cause for concern. The green crab has already invaded numerous coastal communities outside of its native range, including South Africa, Australia, and both coasts of North America. An able colonizer and efficient predator, this small shore crab has the potential to significantly alter any ecosystem it invades. It has been blamed for the collapse of the soft-shell clam industry in Maine.

First seen in San Francisco Bay in 1989, the green crab has been moving northward to Humboldt Bay, California. Live specimens have been found recently in Grays Harbor and Willapa Bay, Washington.

Why should we be concerned?

The green crab feeds on many organisms, including clams, oysters, mussels, marine worms and small crustaceans. Since it can also prey on juvenile crabs and shellfish, a northward spread to the Washington coast and Puget Sound could put our Dungeness crab, clam and oyster fisheries at risk, and the green crab may compete with native fish and bird species for food. In Bodega Bay, California, a significant reduction in population abundance of clam and native shore crab is already evident since the arrival of the green crab in 1993. In addition, the green crab is an intermediate host to a marine worm that can harm the health of local shore birds.

How can it get to Washington State?

There are a number of ways the green crab can invade new habitat. Because the crab tolerates a wide range of environmental conditions, it could travel northward both by natural and human-mediated transportation.

Natural Dispersal:

Green crab larvae can survive as plankton up to 80 days. Ocean currents disperse the larvae many miles up and down the coast. After a period of growth and development in the open sea, green crabs in final larval stage aggregate at night in surface waters. Tides and currents sweep them back into coastal waters where they molt and settle out as juvenile crabs in the upper intertidal zone. If the conditions in their new home are suitable, the crabs may survive and even reproduce, establishing a new population and extending the species' range farther along the coast.

Human-Mediated Dispersal:

There are a number of ways humans can inadvertently disperse green crab to new habitats. Scientists believe that one likely pathway of introduction is through the distribution of live seafood. Green crabs are sometimes present in seaweeds packed with lobsters and commercial oysters. If the packing material and containers are not disposed of properly, the crabs can find their way into waterways. Although heavily regulated, the aquaculture industry is also a potential source of green crab introductions.

Recreational boaters transport nuisance species in bait buckets or boat wells, often without realizing it. Live green crabs are also used as bait by recreational fishers, or are present in the seaweed packed with bait. In addition, they are available for purchase from marine biological supply companies. Supply companies will ship live green crabs anywhere, in any quantity, at any time. If the purchaser, who has acquired the crab either for research or as a "pet" doesn't dispose of the crab properly, or releases it into the wild, the crab is introduced into new habitat.

Scientists have also identified ballast water as a major pathway for aquatic introductions, including the larval stage of green crab. Marine vessels take on and discharge millions of tons of water for ballast each day, which may contain aquatic plants, animals and pathogens. No doubt other human-mediated pathways for introduction exist as well (See Pathways of Aquatic Introductions fact sheet).

Once introduced, some non-indigenous organisms may find the new environment unlivable and won't survive long enough to become established. But sometimes the new environment is favorable to the transported species, and it can live and even flourish. Once it arrives, the green crab can thrive in many types of coastal habitats and in wide ranges of temperature and salinity; many of these suitable habitats are found on the Washington coast. The green crab can produce up to 200,000 eggs at a time, and under certain conditions, it can survive up to two months out of water.

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