



NATIONAL AQUARIUM IN BALTIMORE.

Conservation Education Department
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Fast Facts

- ❑ Over half of all hard-shelled blue crabs caught in the United States come from the Chesapeake Bay.
- ❑ Males have bluish-gray coloring on the inside of their claws.
- ❑ If a crab loses a claw or leg, a new one will grow back at the next molt.

Key Terms

Exoskeleton - A rigid, outer skeleton made of chitin and calcium.

Jimmy - A male crab

Molting - How a crab leaves its old shell, and grows a new, larger one.

Sook - A mature female crab

Zoea - The first stage in a crab's life cycle, just after hatching.

Ask the Aquarium

Fact Sheets from the
Conservation Education Department

Blue Crabs

Blue crabs, *Callinectes sapidus*, live in estuaries along the eastern coasts of North and South America, from low tidelines to depths of 37 meters (120 feet). They live in brackish water and in areas that contain sea grasses or weeds. Blue crabs feed on both live and dead fish, crabs, clams, snails, eelgrass, sea lettuce, and decaying vegetation. The blue crabs scientific name, *Callinectes sapidus*, means "tasty beautiful swimmer." This is in reference to their ability to swim in the water, an ability that not all crabs have, and to their importance as a food source.

What is an Exoskeleton?

Like most large crustaceans, blue crabs have a hard exoskeleton. This rigid outer skeleton is made of chitin and calcium. Exoskeletons must be shed and replaced periodically by a new, larger outer skeleton. During this process, called molting, the old shell cracks just below the crab's eyes and all the way to the points of the shells. The shell also cracks along the backside and along the tops of the claws. Once the shell is broken open, the crab backs out of the old exoskeleton. The crab then draws in water, forcing its new soft shell to swell. The crab's new exoskeleton will be about one-third larger than the old one. The newly exposed exoskeleton is soft and the crab is extremely vulnerable and weak. During this time, crabs hide in protected areas such as marshes and grass beds. It takes about two days for the new exoskeleton to completely harden.



Although heavily regulated, blue crab populations continue to decline in the Chesapeake Bay.

Is it a Boy or a Girl?

The top portion of a crab's exoskeleton is called the carapace. The color of the carapace ranges from olive, brown, or reddish, to varying shades of blue. On the underside of the carapace is the abdomen, or apron. This moveable flap is shaped like a pencil - or the Washington Monument - in males. The apron on the females' abdomen changes as it matures. On immature females, the apron is triangular. It is rounded like a dome- or the Capitol Building- on mature females

Beautiful Swimmers

Blue crabs have compound eyes that rest on short stalks, which allows them to see even the smallest movements in almost any direction. This allows the crab to detect predators and prey. In addition to eyes, crabs have two sets of antennae. The antennae help the crab to feel and sense their surroundings.

Blue crabs have five pairs of legs. The first pair of legs has sharp claws, which can be used for defense or to capture and hold food. Males have bluish-gray coloring on the inside of their claws, thus giving them the common name "blue crabs." Blue crabs expose this coloring as a warning when threatened. Most females have reddish-orange coloring on the tips of their first claws. The last pair of legs has flattened paddles, called swimmerets. These swimmerets enable the blue crabs to swim. Blue crabs may drop or break off a leg when threatened or when trying to escape predators. A new claw regrows during later molts.

Jimmy or a Sook?

Mating takes place from June through October. During courtship, the male, or "jimmy", dances and waves his swimmerets for the mature female, or "sook". Although male crabs reach maturity at varying ages, females are usually mature at one and a half years old. The female must be in the "soft-shell" stage in order to mate. A few days before she sheds her shell, the male moves over the female and cradles her beneath him. A male carrying a female in this manner is called a "doubler". The male releases the female when she is ready to molt. Mating occurs before her new exoskeleton hardens. The male protects the soft-shelled female during this vulnerable time. Once her shell hardens, the female separates from the male and the male will try to find another partner to mate with. The female will not need to mate again. She stores the male's sperm and uses it to fertilize all future spawnings.

Life Cycle

After mating, females move closer to the ocean and burrow in the mud for the winter. Between two

and nine months after mating, they accumulate up to eight million fertilized eggs on the underside of their aprons. These female crabs are known as "sponge crabs" because the bright orange eggs resemble a sponge. Over a period of two weeks, the eggs will develop and change color from yellow to brown before hatching into larvae. While many eggs hatch, as few as two hatchlings may live to reproduce.

The hatchlings, or crab larvae, are known as zoea, which drift with other very tiny plants and animals called plankton. The zoea are 2 millimeters in length (0.1 in) and look very different from blue crab adults. Their rapidly growing bodies molt every three to five days. After six or seven molts, the crabs look like tiny lobsters or crayfish; this is the second larval stage, called the megalops stage. Once the crabs are about 1.3 centimeters (0.5 in) wide, molting slows to every ten to fifteen days. Crabs 10 centimeters (4 in) wide or larger molt every twenty to thirty days. Male crabs continue to molt throughout their lives at a slowing rate. Females stop upon reaching maturity, after twenty-one molts.

Crabs in Maryland

Maryland has one of the largest blue crab fisheries in the United States. Over half of all hard-shelled blue crabs caught in the United States come from the Chesapeake Bay. Blue crabs are harvested commercially by dredging, using trotlines, or with crabpots. The fishery is carefully managed; hard crabs must be at least 5 to 5.25 inches depending on the month (measured across the widest point of the carapace), soft-shelled crabs at least 3.5 inches, and crabs about to molt, called "peelers," must be at least 3.25 to 3.5 inches depending on the month.

Blue Crab Conservation

Although the crabbing industry is heavily regulated, blue crab populations continue to decline in the Chesapeake Bay.

Many factors have affected their population, including overfishing, habitat loss, and habitat degradation. Pollutants such as car exhaust, plant and animal waste, and fertilizer are the main factors impairing the blue crab's habitat. These pollutants release excess nutrients, such as nitrogen and phosphorus, into the Bay, which can reduce the amount of oxygen in the water. They also can produce algal blooms, which in turn damage the underwater plants that the crabs use for food, shelter, and as nursery areas for their young.

Carpooling, planting trees, and using less fertilizer are all actions that people can take to reduce pollutants in the Bay.