



## Eastern Oyster

*Crassostrea virginica*

Oysters have long been a favorite seafood around the world. In North Carolina, traditions of oyster stuffing at Christmas and oyster roasts for family and community gatherings remain part of the state's heritage. Around 1900, North Carolina shellfishermen plucked millions of plump, juicy oysters from coastal waters to meet consumers' demands. Since then, changes in habitats and water quality have caused fewer and fewer of these mollusks to grow in the state.

### History and Status

Centuries ago, Indians esteemed oysters, saving their shells for holy mounds, or middens, on tribal grounds. Rich shellfish beds produced a constant supply of oysters for the relatively few who were willing to gather them. Harvesting oysters became a business on the East Coast as early as the 1800s. The industry hit its heyday at the turn of the century with the advent of dredging machines that collected hundreds of oysters at a time. Early on, most of North Carolina's oysters were canned and shipped to East Coast markets. From 1902 to 1987, oyster production fell from 1.8 million bushels a year to 200,000 bushels. In 1991, only 49,000 bushels were harvested. Today the numbers continue to decline.

### Description

Oysters are bivalves, having two shells. They grow up to 10 inches long and 4 inches wide. Their shells are grayish-white, and appear wrinkled or rough.

### Habitat and Habits

Oyster beds can be found in shallow water or deep, salty water or brackish, and on soft or hard bottomland. But oysters thrive best in quieter bays, rivers, inlets and sounds protected from wind and waves. They grow best in waters with low to moderate salinity, preferring waters that are not too salty or too fresh.

Young oysters seek hard, smooth surfaces on which to attach. Typically they settle on old oyster beds, piles of shells or a fallen tree. Oysters need areas with low, slow currents to attach. Rough waters thrash tiny young oysters, preventing attachment, and they stir up stifling sediments.

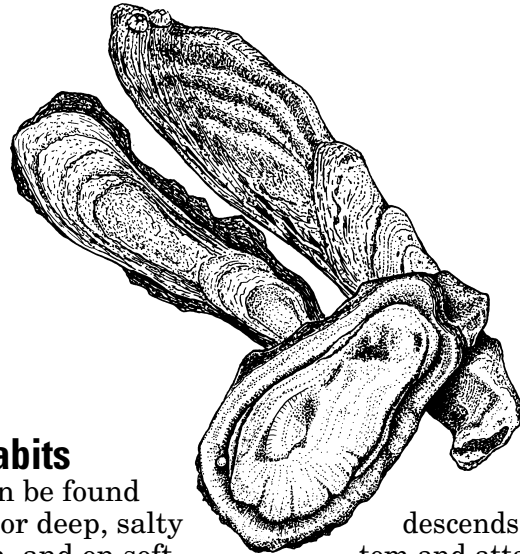
The oyster's life cycle begins with spawning in spring. As coastal waters warm, the female sends up to 100 million eggs floating in the water, which are fertilized by males in the area. Females may spawn two or three times during the summer and early fall, and for seven or eight years. For each spawning, much less than 1 percent of the young oysters survive.

The first phase of a young oyster's life lasts only 10 to 20 hours. Called a *trochophore*, the baby shellfish looks like a spinning top with a tuft of hair on top. In the next stage, the veliger larva looks like a microscopic clam with a glass shell. After 10 days to two weeks, the free-swimming larva

descends to the bottom and attaches to a hard surface, either a live oyster or the shell from a dead oyster. This is sometimes called the mother shell. In two to three days, the *spat*, as it is called, begins to form a characteristic oyster-shaped shell. Even at this stage, it is very small. An average of 4 to 5 spat, but as many as 20 to 40, can be found on the mother shell.

Oysters grow slowly, reaching a marketable size of 3 inches in a year or more. Larger oysters with thick shells and sizable meats may take as long as two to four years to reach full size. Oystermen call small oysters "coons" because of their resemblance to a raccoon's paw; larger ones are "rocks" since they become big and thick.

As oysters grow, they cement themselves together in clusters called "hands." These clusters become protective habitats for other small sea creatures. The oyster's tough shell does not protect it entirely from predators, however. Sea stars, oyster drills,



**Range Map:**  
Occupied range ■

crabs, flatworms, oystercatchers, sea ducks and fish such as drums and rays feed on the oyster's meat.

Oysters breathe and feed by way of cilia-lined gills that pump water in and out, collect food, and transport and excrete wastes. As filter feeders, oysters carefully strain planktonic food such as algae and diatoms from the water. Adult oysters can filter as much as 25 gallons of water per day. Bacteria, viruses, natural toxins or pollutants gleaned from the water can contaminate oysters. Oysters do not prefer to eat bacteria, as some believe, but bacteria are often attached to the foods they eat.

Under good conditions, oysters can live an average of four to five years.

## Range and Distribution

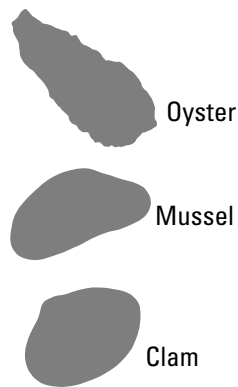
Eastern oysters range from New England through the Gulf of Mexico. They are found throughout the coast of North Carolina.

## People Interactions

Primarily, people feast on the tasty meat of oysters, eating them raw, steamed, roasted or fried. The declining stocks of this once-bountiful shellfish provide a source of income for fewer and fewer shellfishermen in North Carolina and along the East Coast. Over 1 million acres of waters in the state are environmentally suitable for cultivating oysters.

Shellfishermen harvest oysters on public bottomland during a designated season, typically during winter months. Privately leased bottomland can be farmed year-round in North Carolina. State regulators open and close North Carolina shellfish beds according to water-quality levels, as measured by the presence of coliform bacteria.

Human and animal wastes greatly attribute to shellfish contamination. Bacteria and viruses flow into shellfish waters from septic tanks, sewage overflow, discharges from industry, agricul-



tural runoff or marinas with heavy boat traffic. Such contaminants usually do not affect oysters, but may cause stomach or intestinal illnesses in people who eat tainted shellfish.

Oyster production has faltered since 1900 for several reasons, including overharvesting, the mismanagement of harvesting practices such as dredging, loss of habitat, and parasites. Oystermen are harvesting fewer beds because of habitat alterations, such as the filling of marshes, and closures of shellfishing areas because of pollution and declining water quality.

Researchers are studying ways to rebuild oyster populations. Projects such as oyster hatcheries and oyster farms can produce marketable oysters in shorter times than they would grow in the wild.

## References

Amos, William H. *The Life of the Seashore* (McGraw-Hill Book Company, 1966).

Meinkoth, Norman A. *The Audubon Society Field Guide to North American Seashore Creatures* (Alfred A. Knopf, 1988).

## Credits

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# WILD Facts

## EASTERN OYSTER

### Classification

Class: Bivalvia  
Order: Mollusca

### Average Size

Length: 3 to 5 ½ in.

### Food

Planktonic food such as algae and diatoms.

### Breeding

Spawning begins in late spring and continues through fall. Two to three spawnings per year. Female emits millions of eggs in the water, and males in the area fertilize them.

### Young

Pass through trochophore, larval and spat stages before reaching adulthood. One percent of eggs survive.

### Life Expectancy

Average of 4 to 5 years.