



EXPLORE NORTH CAROLINA

THE NORTH CAROLINA MUSEUM OF NATURAL SCIENCES AND THE NORTH CAROLINA MUSEUM OF HISTORY WILL BRING YOU ARTICLES EVERY WEDNESDAY THIS SCHOOL YEAR. THE ARTICLES WILL TAKE A LOOK AT NORTH CAROLINA GEOGRAPHY THROUGH SCIENCE AND HISTORY. THE TOPICS WILL ROTATE WEEKLY THROUGH A COAST/PIEDMONT/MOUNTAIN SEQUENCE.

State shell: Scotch Bonnet

■ Fourteen out of 23 coastal states have official state shells. North Carolina was the first state to adopt a state shell. It chose the Scotch bonnet in 1965. The Scotch bonnet is a gastropod, a kind of mollusk that has one shell and moves around on one "foot." There are about 60 types of Scotch bonnets throughout the world. Scotch bonnets are found from the coast of North Carolina west to Texas, and as far south as Brazil. In North Carolina, they are especially common from Ocracoke Island south.

A Scotch bonnet shell has a pattern of squares and spiral bands that looks like Scottish plaid fabric, and it is shaped like a woolen cap worn by Scots. These two features, which give the shell its name, led North Carolina to choose the Scotch bonnet as the state shell in honor of early Scottish settlers.

The Scots-Irish, or Ulster Scots, descended from Scots who settled in Northern Ireland in the 1600s. The Scots-Irish left Ireland in great numbers in the 1700s to escape high rents, heavy taxes, and famine. Many of them immigrated to America and settled in Pennsylvania. Others traveled down the Great Wagon Road to North Carolina. They began to arrive in the Piedmont region in the 1730s, in time to plant the winter crops and seedlings that they had brought with them.

Immigrants from the Scottish Highlands



Photograph courtesy of www.jaxsells.org/

and Lowlands came to North Carolina, too. Many of the Lowland Scots were merchants. A large number of them went to Wilmington to improve their fortunes. The Highland Scots left their homeland because of high rents, unemployment, and poverty. The first group of Highland Scots arrived in 1739 and many more followed, especially in the 1760s and 1770s. They settled in the upper Cape Fear valley.

Many people collect Scotch bonnets to look at, but the pretty shells have practical uses, too. Some cultures in the South Pacific use them as cooking tools. Jewelry designers make cameos from them. These artists carve designs into the shells and create pendants, pins, and other jewelry. Carving reveals the different colored layers of the shell.

The Scotch bonnet is a popular shell to collect, but the shells are difficult to find for this reason, and also because the Scotch bonnet population has fallen as a result of accidental harvesting by commercial fishermen. The best time to find Scotch bonnet shells is after a storm, when the ocean waves have washed them ashore. A good place to look for them is behind sand dunes, where high tides and winds push shells. If you're patient, you may find a Scotch bonnet shell to remind you of your trip to the beach – and a little bit of North Carolina history.

The importance of shellfish

■ Mollusks live all over the globe, including North Carolina. Some mollusks live in fresh water, some live in salt water and some even live on dry land!

One type of mollusk is called a bivalve because its shell has two halves. Clams, mussels and scallops are all bivalves. Sometimes people call bivalves "shellfish." Snails and shrimp are also called shellfish, but only bivalves have two shells.

Bivalves usually live in the water. Some of them, like clams, like to dig a little hiding place under the sand. Other bivalves, like mussels, prefer to attach to a something stable like a rock or a man-made structure like a fishing pier. Scallops are one of the most mobile bivalves. They rest on the very bottom of whatever water they live in, but they can move. If they feel threatened, scallops can expel water so forcefully it forces them to move backward.

Bivalve shells are made of calcium and lime; they get the materials they need to build their shells from the water around them. Bivalves are called "filter feeders" because they draw water, oxygen and any food particles it carries into a siphon that leads to internal gills. The gills capture food particles that are carried to the bivalve's mouth.

Bivalves work hard for their food and shells – most filter 50 gallons of water each day. That's enough water to wash a whole load of clothes or fill half a bathtub. Sometimes, the water where bivalves live gets polluted. Bivalves can get sick or die from polluted water, and when people eat sick shellfish, they can get sick, too. Most people who get sick from shellfish in the United States eat them raw, so the safest thing to do is cook them first.

If you gathered them all together, polluted water has closed 365,000 acres of shellfish beds in North Carolina waters. We can all help keep shellfish healthy by not littering, not pouring oil, paint or other chemicals on the ground and picking up after pets on walks. All these items can make shellfish sick.

Many people make their living from shellfish. In 2004, North Carolina sold more than \$6 million

worth of clams, scallops and oysters. Harvesting is hard work. Sometimes rakes are used to gather clams from the bottoms of the water. Divers may go deep underwater to find shellfish; others wait until the tide goes out and pry mussels off rocks. Shellfish are low in fat, but high in minerals and vitamins. Unless you are allergic, shellfish can be very tasty and healthy.



Freshwater bivalves, such as this Dwarf Wedge mussel found in the Neuse and Tar river basins, are some of the most endangered animals in the country.

credit: Art Bogan, NCMNS

ACTIVITIES

You have read about how important shellfish are to North Carolina's economy and learned how polluted water has negatively affected this industry.

■ **List other industries in North Carolina you feel could be negatively impacted by pollution or other environmental changes.**

■ **Look for newspaper articles about these industries and others that have been affected by these changes.**

■ **What do you think can be done to protect both the environment and the businesses harmed by environmental problems?**

■ **Can you find articles where businesses or individuals have been fined for harming the environment?**

■ **Design a poster encouraging your peers to protect the environment in different ways.**

Source: Chrystal Bartlett, NC Dept. of Environment and Natural Resources