

# Nature and Environment Education - school program



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Cover photo: queen conch, *Strombus gigas*, photo: Diver.net ©

## **Introduction**

The Queen Conch is an endangered species whose numbers in the waters off Bonaire have been vastly reduced by over-fishing. Hence it is a protected species here, so it must not be caught. This species is also endangered worldwide, and therefore trade in conch is regulated by CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora).

The Queen Conch or Pink Conch (pronounced "konk") is a mollusk whose scientific name - *Strombus gigas* - means "giant spiral shell".

## **History of Bonaire's Queen Conchs**

Fossils indicate that conch first appeared about sixty-five million years ago. Archaeological evidence shows the shell was used 3,000 years ago on Bonaire for cooking pots, chisels, knives, scrapers, hooks, earrings, buttons and pendants.

In Bonaire, most conchs are found in the waters of Lac. Oral history tells us that conch used to be an important export product. Sailing vessels came from Curaçao in the bay of Lac to buy conch from the fishermen who lived at Cai. The conch was sold in Curaçao and other Caribbean islands. Many households received their incomes from selling conch. Back then, Bonaire's population was small. In those days, the fishermen probably sold around 500 conchs per month. Calculations were made from estimates of the conch piles. At Cai in the late seventies there were around 10 piles with a height between 2.5 and 3.5 meters. The population of Bonaire continued to grow and people continued taking conch. Tourism started to flourish in Bonaire. As the island's economy continued to grow, so did the number of restaurants, small guesthouses and hotels. Besides fishing for conch for consumption, with the arrival of tourists, people started to make souvenirs from the conch shells.

## **Importance of Protecting Conch**

In December 1969 scientists P. Wagenaar Hummelinck and P.J. Roos cautioned Bonaire's government that conch fishing had become unsustainable because conch numbers had dwindled. Belatedly, with the introduction of the Marine Ordinance in 1985, conch became a protected species and catching conch was prohibited.

Killing conch is unfortunately still rather common. The rangers of the BNMP continue to apprehend poachers. If poaching does not stop, conch will become extinct on Bonaire.

If you see anyone take a living Queen Conch or the shell, please report this immediately to a Bonaire Marine Park Ranger (786-8444 or 717-8444). We must all help to protect and preserve nature. Please explain this to others.

The goal of protecting conch is for conch again to provide a source of income for the island. If today we leave the conch in the sea where they can grow and have babies, in the future this will occur.

## **Reproduction**

Queen Conchs will usually mate in shallow waters in sandy areas behind coral reefs. The female lays egg masses with about half a million embryos. It takes about five days for the embryos to leave the eggs and travel to the surface. At this stage, they are called veligers, and they drift in the ocean for about 3 weeks. Later, at about the size of a grain of sand, they lose their swimming ability and settle to the bottom. By this time, they have developed a tiny transparent shell called protoconch with a foot and a mouth. They reach a shell length of close to 3 inches after 1 year and 5 inches after 2 years. Unfortunately, very few of the original half a million embryos reach this stage.

After 3 years the conch is finally mature. It will then weigh approximately 2 lbs. and will have reached a length of roughly 8 inches. The shell length will increase at an average rate of three inches per year in its active growing stage. The average life span is about 6 to 10 years if people obey the law and allow the animal to keep living.

The Queen Conch lives in warm shallow waters throughout the Caribbean. During the daytime they are usually buried in the sand and come out to feed at night on algae and sea grass.

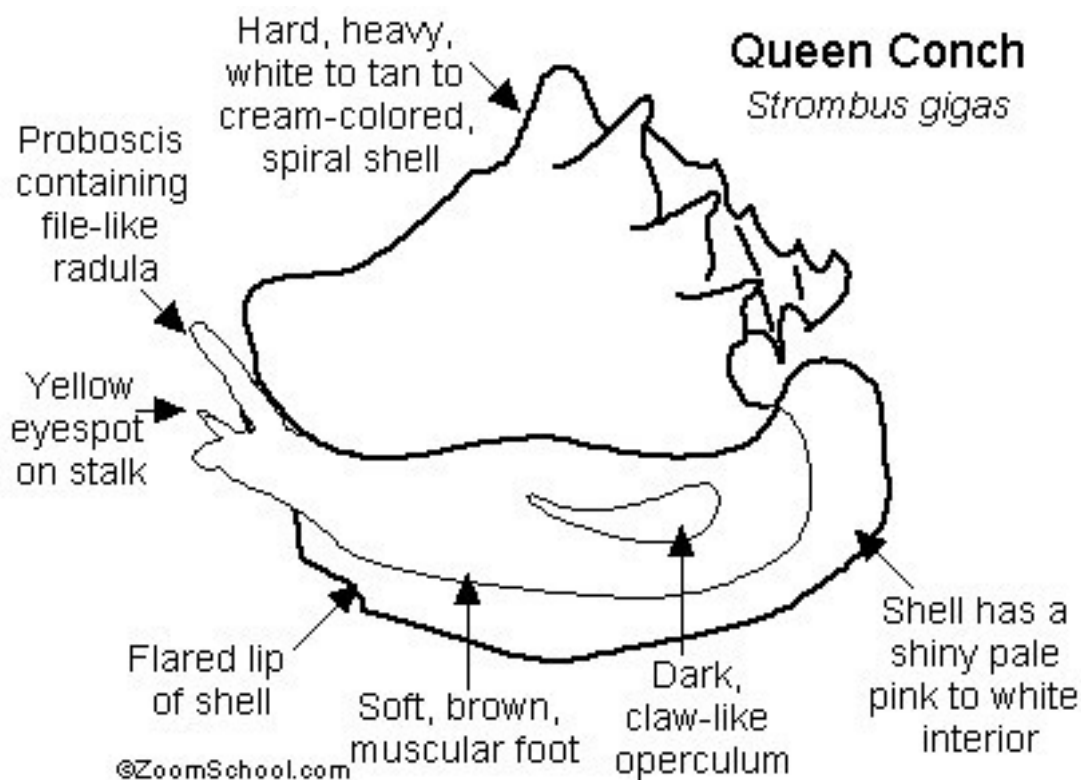
The Queen Conch or Pink Conch (*Strombus gigas*, named by Linnaeus in 1758) is a gastropod, a soft-bodied type of mollusk that is protected by a very hard shell. It is an invertebrate, an animal without a backbone.

## **The shell**

The Queen Conch has a large, spiral shell often lined in pink. The conch's mantle, a thin layer of tissue located between the body and the shell, creates the shell. The conch builds the hard shell from calcium carbonate that it extracts from the sea. The shell is up to 1 foot (30 cm) long. The lip of the shell is flared and has spines to deter its many predators.

## Anatomy

The body is divided into the head, the visceral mass, and the foot, which is small. The conch has two pairs of tentacles on the head; it has a light-sensitive eyespot located on each of the larger tentacles. The smaller pair of tentacles is used for the sense of smell and the sense of touch. The small operculum (which is like a trap door) is located on the foot and looks a bit like (and works like) a claw. Young conchs are able to bury themselves in the sand when they are in danger.



## Diet

Conchs eat grasses, algae, and floating organic debris. They eat using a radula, a rough tongue-like organ that has thousands of tiny denticles (tooth-like protrusions).