

# Overfishing Threatens Conch, Staple Of Caribbean Islands

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National Geographic News Service

Nearly every Friday night, on the eastern Caribbean island of St. Lucia, hundreds of residents and tourists gather to dance in the streets, drink, and eat conch meat barbecued on skewers.

"Those Friday night fetes are really wiping out the island's queen conch," observes marine biologist Carl J. Berg.

To the north on Bermuda, in the Sargasso Sea, it already may be too late to save the queen conch, Berg says. A survey he made of Bermuda's waters turned up only a few young conchs.

The conch—a large marine snail with a flamboyant pearly pink shell—is growing scarce throughout its range. The shells that children lift to their ears to "hear the ocean" and tourists carry home to adorn coffee tables and mantles are sold at the estimated rate of a million a year in Florida. Caribbean people have endless purposes for the conch—arranging the shells in neat rows to mark graves, for example. Entire isles have been formed from cast-off shells.

## FRITTERS AND CHOWDERS

But conch (pronounced "konk") is most important as a source of nutrition, the "hamburger of the Caribbean." The conch snail is cut from its shell and its muscle meat prepared in dozens of ways—in stews, chowders, fritters, and raw with crackers. Millions of conchs are shipped to the United States to supply Cubans, Haitians, and other Caribbean immigrants.

Overfishing, especially to support a \$5 million a year export industry, has severely depleted the species.

Berg, of the Marine Biological Laboratory at Woods Hole, Mass., and his colleague, Katherine Orr, are trying to reverse the tide. They said the eastern Caribbean in 1984, gathering hundreds of conch specimens for a study. On each of the 15 islands they visited, they heard virtually the same story, as Berg recalls:

"The old folks would say, 'When I was a kid I could wade out knee-deep to catch dinner for our family. Now we have to take scuba tanks far from shore and dive as deep as 100 feet for conch.'"

A diver for 20 years, Berg often had a hard time finding conchs, especially at Dominica, where fishermen from nearby Guadeloupe and Martinique have helped decimate them. Sand and coral growth often obscured the shells from view.

The islands' fisheries officials unanimously supported Berg's goal: to determine scientifically how to ensure a permanent conch population for all of the islands. His work is partly funded by the National Geographic Society.

Ignorance ran deep. "Some of the fishermen were collecting the babies and not realizing they were conch," Katherine Orr reports. "They knew nothing about the snail's reproduction; they thought conchs just appeared." Much of her time was spent teaching islanders the facts of conch life.

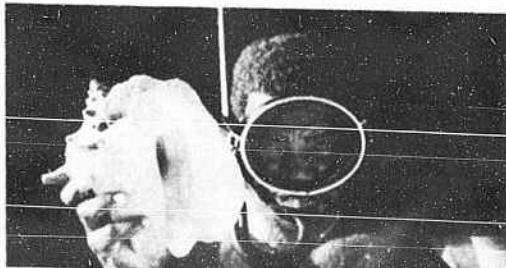


PHOTO BY JODI COBB © NATIONAL GEOGRAPHIC SOCIETY  
SUCCESSFUL SNORKELER emerges from the waters of a St. Croix reef with a queen conch.

## FLOATS GREAT DISTANCES

The queen conch (*Strombus gigas*) begins life underwater as one of thousands of eggs in a sac that resembles a sand-covered wad of spaghetti. The egg develops into a "veliger", not much larger than a grain of sand, and begins to float freely, transported perhaps hundreds of miles by the sea's currents.

As it floats, the tiny shell on its back grows.

After about three weeks, the conch loses its swimming lobes and settles onto the sandy bottom, where it will remain for 2½ years. At the age of three, it has a full rose-colored shell and also is ready to reproduce. Conchs remain in their shells for mating; the female is fertilized by a far-reaching male organ.

## CONCH HABITS

By digging its clawlike foot into the sand, a conch can propel itself forward in a series of short hops to seek food or flee enemies. Conchs are believed to live six years on the average, some of them perhaps twice that.

A goal of the scientists' project is to discover which conch populations are related and how they disperse. To determine feasibility of chemical identification, Berg and Orr collected conch samples from four widely scattered points—Bermuda, Belize, Carriacou, and the Turks and Caicos Islands. Chemical analysis of the samples showed significant genetic variety among the four sites.

Last year they zeroed in on Mexico and the Lesser Antilles Islands in the eastern Caribbean, where conch is an important resource, collecting samples from 19 populations. The samples are being analyzed by University of Colorado Professor Jeffrey Mitton to determine the interdependence of conch populations.

## DISPERSAL PATTERNS PUZZLE

"Let's say all of St. Lucia's conch

float there from Barbados," Berg conjectures. "St. Lucia could kill off all of its conch and still have plenty coming in. The key to its supply would lie miles away on Barbados."

Even patterns within St. Lucia's waters are murky. Berg has advised islanders planning to start a conch fishery on the south end to wait for results of the specimen analysis. If the island's southern conch prove to be the parents of those in the north, a new fishery could destroy all of the island's breeders.

The decline in conch populations was first noticed more than 10 years ago on Barbados and later at two sites with large fisheries—Belize and the Turks and Caicos. Some islands now restrict conch fishing; it has been illegal in Bermuda since 1978.

To rejuvenate Bermuda's conch population, Berg has recommended moving egg cases in from a downstream site. He also has helped the Organization of Eastern Caribbean States to draw up laws regulating conch fishing. The regulations—which would bar collection of baby conch—await ratification by the islands' government.

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