

# Tumors still plague Hawaii sea turtles

The grotesque tumors found on a majority of green sea turtles in some Hawaii bays are the animals' top research need, according to an interim recovery plan developed for all Hawaii's sea turtles.

There are plenty of other research needs, but few appear as critical as finding a way to deal with the fibropapillomas, the growths that have spread like an epidemic through the green sea turtle populations of the Hawaiian Island and Florida waters in recent years.

Scientists continue to be stumped by the growths.

"The major thing we know is that we're dealing with a global disease that's being seen in multiple places around the world. In the 1980s it exploded around the world. The reasons for this at this time are unknown," said Elliott Jacobson, veterinarian and professor of wildlife medicine at the University of Florida.

The Hawaii green sea turtles, *honu* in Hawaiian and *Chelonia mydas* to science, declined in numbers through the 1960s, likely because of an increase of fishing for them. In 1974, the state banned commercial fishing for them. In 1978, they were listed by the federal government as a threatened species,



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and killing them is now a violation of federal law.

Hawaiian green sea turtles may cruise from Pearl & Hermes Reef in the Northwestern Hawaiian Islands to the Big Island, but most of them return to a sandy islet at French Frigate Shoals, 400 miles west of Kauai, to lay their eggs. A few lay eggs in the main Islands.

They live a very long time, and average 25 years of age before they reach sexual maturity, according to the interim recovery plan. The tumors may prevent many from reaching sexual maturity.

The first tumors were spotted in Hawaii in the late 1950s. They were rare through the early 1960s. The numbers rose. In some

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## Park program disease-free

The green sea turtles at Sea Life Park are, so far, free of the diseases that causes large tumors to grow on their bodies.

The park's captive turtle population is made up of animals collected before turtles were declared endangered, and the offspring of those animals. They are kept apart from the wild turtles that occasionally are brought to the facility.

The turtles produce eggs regularly. They are hatched and most of the hatchlings are immediately released.

Some are raised for release when their shell lengths are 1 to 1½ feet and the animals are 2 to 3 years old. Scientists know very little about the survival rates of hatchlings, and believe older turtles have a much higher chance of making it.

Green sea turtles are believed to do quite a bit of ocean traveling during their lives, but some of the captive animals are collecting frequent flier miles.

The most recent group of these reptilian air travelers arrived earlier this year after a stay at the Vancouver Aquarium. Following a period of readjustment to Hawaii conditions, they were to be released, probably in the relatively disease-free waters off the Kohala coast.

— Jan TenBruggencate

# Turtles: Tumors still a problem

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areas, like Kaneohe Bay, half the turtles had fibropapillomas, but other areas, like south Mokolai and West Hawaii, remained virtually free of them through the 1980s.

George Balasz, a National Marine Fisheries Service researcher, said it's gotten so bad that in some areas, it is considerably easier to find a diseased turtle than to find a healthy one.

Researchers have found similar differences off the East Coast. More than half the young turtles in Florida's Indian River Lagoon System had tumors, but in the Atlantic Ocean a few miles away, no tumors were found.

Jacobson said the situation is repeated worldwide: Turtles in the open sea tend to be far

less likely to have tumors than those in shallow, nearshore waters.

Researchers have not identified a pest or poison or pollution source that might cause the tumors. They haven't identified virus or bacteria sources. And they have not been able in the laboratory to infect clean turtles using tissue from sick turtles, so they still don't know how the animals get the tumors.

Researchers across the country and at international institutions are studying the problem.

A research plan published last year by the National Marine Fisheries Service cited several reasons for learning more, beyond attempting to control the impact on the threatened sea turtles themselves.

■ They could represent a reaction to a toxic pollutant in

the ocean that we haven't yet identified.

■ There is the potential humans could suffer health hazards associated with them.

■ The visitor industry could be affected if people entering the state's waters repeatedly see turtles carrying ugly tumors.

The pale tumors can appear on the face, in the eyes, under the flippers, in the lungs and elsewhere. They can grow to more than 10 inches in diameter, and can block vision, impede swimming or even choke turtles to death if they grow in their mouths or throats. Many animals have washed up on beaches dying of starvation, too blind to find food, or incapable of swallowing it.

Researchers have tried removing tumors surgically or with lasers, but they often grow back. There are a few

cases of tumors disappearing on their own, but none of these have been seen in Hawaiian turtles.

Scientists have found blood fluke eggs in some of the tumors, but not in others. They have found a herpes virus in some tumors, but have not been able to infect other turtles and have them develop tumors.

One problem with the disease is that there is so little money available to study it. Jacobson said that if you added up all the money available nationwide for the last six years for the study of fibropapilloma in sea turtles, it might add up to \$40,000.

"We certainly are being hampered by that. Funding is not that great and it may never be. We're going to have to peck away at it and see what we can come up with," he said.