Why Life Is So Tough for Sea Turtles

Ocean trash and an epidemic virus are wreaking havoc on the marine reptiles, which have been beating the odds for millennia.

A baby green sea turtle swims off French Polynesia. Many hatchlings are eaten by predators on the beach.

PHOTOGRAPH BY DAVID DOUBLET, NATIONAL GEOGRAPHIC CREATIVE

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PUBLISHED MAY 14, 2016

CLEARWATER, FLORIDA—Cupid the green sea turtle swims around the aquarium with her butt in the air.

At first it just looks like quirky behavior, but Cupid has a buoyancy problem, linked to an old wound, that makes it hard for her to stay underwater.

Because she wouldn’t survive in the wild, Cupid is a permanent resident here at the Clearwater Marine Aquarium’s Turtle Bayou, which is home to three other green sea turtles. (Also see “8 Pictures From Inside Sea Turtle Rescue and Rehab.”)

The U.S. Fish and Wildlife Service recently reclassified green sea turtles in Florida from endangered to threatened in parts of their range, due to increased numbers of turtles nesting in Florida and on Mexico’s Pacific coast.

In 2015, authorities reported 28,088 green sea turtle nests in Florida—a new record
high. In the early 1990s, fewer than 5,000 nests a year were recorded.

It’s good news, but turtles aren’t out of hot water just yet.

All seven species of the world’s sea turtles are declining, whether it’s from ocean pollution, poaching, or loss of beach nesting habitat, including from rising sea levels due to climate change. (See pictures of millions of sea turtles that might have been killed accidentally.)

Weird Animal Question of the Week took author’s prerogative to ask “What are the ups and downs of being a sea turtle?”

**Light Effects**

Boys are cool. Girls are warm.

Sounds sexist, but it’s true of all sea turtles and most other turtles, too. Mother sea turtles lay their nests on beaches, and the temperatures of those nests determine the sex of hatchlings. Warmer nests produce more females, and cooler ones produce more males.

It’s likely that “temperature affects hormone regulation in a critical period of development in the embryo, influencing the sex ratio within the nest,” says Sheila Madrak, a conservation biologist at San Diego State University.

Once babies hatch on the beach, they find their way to the ocean by following the light of the moon. But artificial lighting—even a big screen TV in a window—can confuse them, so many never make it to sea. (See National Geographic’s photos of light pollution.)

Though it varies among species, the average number in a clutch of sea turtle eggs is 110, with an average of about two to eight nests per season, says Adrienne Cardwell, the Clearwater aquarium’s manager of Sea Turtles and Aquatic Biology Programs.

In addition to getting disoriented, many hatchlings are picked off by predators, especially birds, as they crawl toward the sea.

**Teenage Mystery Turtles**

Green sea turtle hatchlings in Florida that do reach the water can’t exactly relax.

The tiny reptiles must swim nonstop up to 100 miles (160 kilometers) to a floating bed of grass called the Sargasso Sea, where they’re safely camouflaged from predators.

So begins “the lost years,” a period of up to 15 years that’s still a mystery to scientists, says Madrak.

The turtles are thought to spend it hanging out in remote parts of the ocean, eating and growing big. Really big, in the case of the leatherback, which can weigh nearly a ton.

**Trouble for Turtles**

Ocean trash is the sea turtles’ greatest threat, Cardwell says.

Turtles often get entangled in discarded fishing gear, and leatherbacks are prone to mistaking plastic bags for the jellyfish that are their favorite food. In 2015, people rescued an olive ridley sea turtle off Costa Rica with a plastic straw stuck up its nose.
A relatively new threat to green sea turtles is fibropapillomatosis, or FP, a virus that causes soft tissue and eye tumors and is an epidemic on the U.S. East Coast and in Hawaii.

The tumors can vary in size, but large tumors can impede the animals’ ability to swim, eat, and see.

Wildlife officials in some parts of Florida are rescuing green sea turtles with FP at a rate that’s “off the charts,” Cardwell says. (Related: "Sea Turtle Herpes Tumors Linked to Sewage?")

These diseased turtles are treated here at the aquarium’s surgical center, where specialists remove the tumors with lasers in an attempt to get rid of the virus.

A sea turtle rescue center in North Carolina cares for and rehabilitates injured sea turtles, and returns them to the ocean amid cheering crowds.

The turtles regain their strength at the aquarium’s rehab center, where they may one day be released back to the ocean. The center has released—and even rescued again—rehabbed turtles.

**Last Laugh?**

Though sea turtles have it tough, they don’t cry—even if they seem to. The reptiles excrete excess salt from a gland near their eye that can look to us like tears, Madrak notes.

Actually, sea turtles may have the last laugh. (See National Geographic’s sea turtle pictures.)

Not only have the animals as a group been on Earth for over a hundred million years, they’re long-lived, with some species living a century.

“Modern sea turtle research only started in the 1940s,” Madrak says, so “most of the turtles that we study outlive everybody who’s studied them so far.”

So long as they stick around, we can live with that.