"Study and Recovery of Hawaiian green turtle population celebrates 40 years of data" - CCB Allen Press, 22 December 2015

Study and Recovery of Hawaiian Green Turtle Population Celebrates 40 Years of Data

“A Review of the Demographic Features of Hawaiian Green Turtles (Chelonia mydas),” Chelonian Conservation and Biology, Vol. 14, No. 2, 2015, is now available online.###

A Quarter of the Country’s Green Sea Turtles Call Florida Refuge Home

By David Frank and James Gorman, New York Times

Green sea turtles have had their ups and downs. They were so plentiful that they were commercially harvested for hundreds of years in the Atlantic, but are now listed as threatened or endangered under the Endangered Species Act, depending on the location.

They were one of the first species to be protected by regulations. That was in Bermuda in the 1600s. Apparently the effort didn’t work, however, as that local population was exterminated.

These days, however, their numbers are increasing. In the Archie Carr National Wildlife Refuge, just below Cape Canaveral, they are having a record year. Researchers and students at the University of Central Florida’s Marine Turtle Research Group counted 12,804 nests as of Thursday in the 13 miles of the refuge’s beaches that they monitor. That’s the first time the number has topped 12,000, said Kate Mansfield, who leads the group.

That’s at least 25 percent of the green sea turtle nests in the United States, and the result will probably be more than 700,000 hatchlings emerging, Dr. Mansfield said.

“It’s a pretty phenomenal sea turtle nesting spot,” she said. The research group has been monitoring the area for 35 years, dating back to before the refuge was established in 1991.

She emphasized that although the news was good for green turtles now, the turtles were a very long-lived species and long-term monitoring is essential. The turtles take 25 years to mature, and the ones making nests now were hatched around the time the refuge was established. They also benefit from the Endangered Species Act, she said, and from fishing regulations to decrease the accidental catch of sea turtles.

The stretch of beach the university monitors also has more than 12,000 nests made by loggerhead turtles. At the height of the nesting season there, she said, 400 to 500 nests may be dug each night.

If the turtle population keeps growing, it is going to be one crowded beach.
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In the 1970s, Hawaiian green turtles faced near extinction due primarily to unregulated commercial hunting. An article featured in the journal Chelonian Conservation and Biology documents the resurgence of the Hawaiian green turtle population, which has more than 4,000 breeding females today.

Four decades of research on Hawaiian green turtles (Chelonia mydas) are consolidated in this comprehensive review article, offering new and updated demographic information. The data collected show how the green turtle has rebounded from near extinction in the 1970s to a population of about 4,000 breeding females today.

The scope of research conducted during these years is detailed in the journal Chelonian Conservation and Biology. The Hawaiian Institute of Marine Biology and the U.S. Fish and Wildlife Service began studying the green turtle in 1973 by monitoring and tagging nesting turtles. In 1982, a marine turtle research program within the National Oceanic and Atmospheric Administration (NOAA) started studying sea turtle strandings and necropsying dead turtles. A companion program launched in 1990 sought to rescue, rehabilitate, and conduct clinical research on stranded turtles.

Early research showed that unregulated commercial hunting of Hawaiian green turtles, primarily for the restaurant trade, was unsustainable. Preliminary data from that period convinced the state of Hawaii to legally ban all commercial taking of turtles. This was followed by adding the green turtle to the U.S. Endangered Species Act.

I am extremely encouraged and confident that the resiliency and durability of the Hawaiian green turtle population can overcome any reasonable challenges it may face, so long as human take is sustainable.
These green turtles primarily nest in the northwestern Hawaiian Islands that extend from Nihoa to Kure. As remnants of extinct volcanoes, these islands are geologically older than the southeastern Hawaiian Islands, where the eight large islands are home to most of Hawaii’s human population and still-active volcanoes.

Seven long-term data sets and associated sample arrays now exist and are catalogued at NOAA’s Pacific Islands Fisheries Science Center in Honolulu, HI. Samples were collected annually over periods of 24 to 41 years. The seven data streams include nesting female monitoring and tagging; ocean capture/basking turtle tagging; strandings; necropsies, including pelagic turtles by catch; rehabilitation and release; euthanasia; and satellite tracking.

“I am extremely encouraged and confident that the resiliency and durability of the Hawaiian green turtle population can overcome any reasonable challenges it may face, so long as human take is sustainable,” said George H. Balazs, a researcher with NOAA and lead author of the review.

The research on green turtles in the Hawaiian Islands offers a model for understanding recovering sea turtle populations. Conservation and management practices in Hawaii founded on this research serve as a learning tool for other Pacific islands trying to sustain important sea turtle resources.


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About Chelonian Conservation and Biology
Chelonian Conservation and Biology is a scientific international journal of turtle and tortoise research. Its objective is to share any aspects of research on turtles and tortoises. Of special interest are articles dealing with conservation biology, systematic relationships, chelonian diversity, geographic distribution, natural history, ecology, reproduction, morphology and natural variation, population status, husbandry, community conservation initiatives, and human exploitation or conservation management issues. For more information about this journal, see http://www.chelonian.org/ccb/.

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Endangered green sea turtles shatter nesting record

MELBOURNE, Fla. -- Four decades ago, biologists thought green sea turtles might go extinct. But this year, the endangered reptile dug a record number of nests at the Archie Carr National Wildlife Refuge, with two months still left in their nesting season.

"It's an incredible thing," said Llew Ehrhart, professor.
Endangered green sea turtles shatter nesting record

In the 1970s, biologists could only find a handful of green sea turtles nests at Archie Carr and the Melbourne Beach area.

This year, UCF researchers counted 12,026 green turtle nests at Archie Carr refuge, already crushing a record the turtles set at the refuge in 2013 — 11,839 nests.

Sea turtle wearing a GoPro shows beauty of Great Barrier Reef

The nesting at Archie Carr is significant, because biologists consider that span of beach among the most important sea turtle nesting spots in North America and indicative of how turtle nesting is going as a whole.

In general, green sea turtles nesting has "on" years and "off" years, with the number of nests spiking every other year. So biologists anticipated an "on" year. But this is the first time green turtle nests surpassed 12,000 nests, UCF researchers said.

Nesting on the "on" years has ballooned, from 455 nests in 1988 to more than 8,400 nests by 2000.

And now they dig six times that amount of nets.

(UCF, with permission from U.S. Fish and Wildlife Service, taken as part of UCF's permitted research activities.)

Gustavo Stahelin, a Ph.D. student at University of Central Florida, holds a hatching sea turtle. (Photo: UCF, with permission from U.S. Fish and Wildlife Service, taken as part of UCF's permitted research activities.)

Pelek Stahelin, a Ph.D. student at University of Central Florida, holds a hatching sea turtle. (Photo: UCF, with permission from U.S. Fish and Wildlife Service, taken as part of UCF's permitted research activities.)

Fox News host grills Mulvaney on 'quid pro quo'

Mom of school shooter charged with 6 felonies

3 soldiers die, 3 hurt in Fort Stewart training tragedy

Trump gets secretary of defense's name wrong

Milan seeks US apology: WWII bomb killed 184 children
Endangered green sea turtles shatter nesting record

“This is really a comeback story,” Kate Mansfeld, a UCF assistant professor of biology, said in a release. Mansfeld leads a team of students and research scientists who monitor turtle counts on the beach during turtle nesting season, which runs May 1 to Oct. 1.

"It is a really remarkable recovery and reflects a ‘perfect storm’ of conservation successes," Mansfeld added, "from the establishment of the Archie Carr, to implementing the Endangered Species Act, among many other conservation initiatives. It will be very exciting to see what happens over the next 20 plus years."

Green sea turtles are just one of three species that use the refuge as their nesting grounds.

Huge sea turtle released into the Atlantic Ocean

Endangered leatherback and threatened loggerhead sea turtles also nest on Brevard County’s beaches.

Sea turtles dig about 80 percent of their nests in the United States. Archie Carr is home to one of the largest nesting beaches for loggerhead turtles in the Western Hemisphere, with among the highest density of nests.

Hatchlings paddle out against an ever-strengthening current of challenges, which only the fittest of every 10,000 succeed long enough to become an adult turtle.

The increase in green sea turtles nesting is four decades of conservation measures paying off, Ehrhart says.

Researchers at the University of Central Florida have counted a record number of green sea turtle nests this year at the Archie Carr National Wildlife Refuge. The refuge is one of the most important sea turtle nesting beaches in the Western Hemisphere. (Photo: UCF, with permission from U.S. Fish and Wildlife Service, taken as part of UCF’s permitted research activities.)

Pressure from commercial fishing, diseases and habitat loss chipped away at the reptile’s numbers. Hatchlings wander into roads because of bright beach lights. In nations where their sweet-tasting meat is savored by the locals, the perils are worse.

Native Americans and early European settlers also once harvested green sea turtles for their meat.
Endangered green sea turtles shatter nesting record

But laws prohibiting the harvesting of sea turtles, excessive beach lighting and fishing nets that cause turtles to drown have helped their numbers rebound.

In 1978, the federal government listed the green sea turtle under the Endangered Species Act.

Green sea turtle populations in Florida and the Pacific coast of Mexico are listed as endangered. Elsewhere, the species is listed as threatened.