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local & business

Honu ea are 'truly local,' study finds

Most Hawaiian hawksbill sea turtles spend their entire lives in the islands

By Mindy Pennybacker

mpennybacker@staradvertiser.com

Not to be confused with the mellow Hawaiian green sea turtle known as honu, the elusive honu ea, or Hawaiian hawksbill sea turtle, is federally endangered and far less frequently seen.

Smaller than honu, which are vegetarians, adult honu ea have an average shell length of 2-1/2 to 3 feet, and their narrow head and beaklike jaws allow them to pry their prey — sponges, anemones,

squid and shrimp — from crevices in coral reefs.

They're named after ea, or the fungal infection thrush, which Hawaiians treated with medicine made from their shells.

Sibling species in the genus Cheloniidae, green and hawksbill sea turtles are found in tropical and subtropical waters around the world, but populations of Hawaiian green sea turtles, classified as threatened here but endangered elsewhere, are gradually increasing due to conservation efforts in the islands, where they outnumber Hawaiian hawksbills about 100 to 1, according to the National Oceanic and Atmospheric Administration, which has been gathering data on



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both species in Hawaii for more than 30 years.

"A total nesting female honu ea population of around 150 to 200 individuals is a good estimate, (although) we see fewer than 15 females nesting annually across the

entire archipelago," said Alexander R. Gaos, a research ecologist in the Marine Turtle Biology & Assessment Program of the NOAA Pacific Islands Fisheries Science Center. He added that most sea turtle population counts are based on nesting females.

Gaos is lead author of a recent study, published in the journal Conservation Genetics in June, that found that most honu ea are not

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only born but spend their entire lives in the islands, "making them true Hawaii locals," he said.

Based on comparisons of mitochondrial DNA, the authors concluded that Hawaiian hawksbills constitute a distinct and isolated nesting colony in the Central North Pacific Ocean, having evolved "specific genetic mutations that make them different from other nest populations."

The study also revealed that long ago, Hawaii likely served as a "steppingstone" for hawksbills as they spread across the Pacific.

The scientists added the distinctiveness of honu ea "can be good news for wildlife managers because conserving species that migrate across international borders can be complicated."

However, they said, this means the honu ea population could also be more vulnerable to local threats.

Listed as endangered in 1970 under the U.S. Endangered Species Conservation Act and now protected by the Convention on International Trade of Endangered Species after having nearly gone extinct after hundreds of years of being killed for their beautiful "tortoise" shells, hawks-



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The honu ea was covered under the U.S. Endangered Species Conservation Act in 1970 and is now protected by the Convention on International Trade of Endangered Species. They used to be killed for their beautiful shells. However, their flesh is "deadly poisonous."

bills have an estimated worldwide population of 20,000 to 23,000 nesting females.

Hawaii's may be one of the smallest nesting hawksbill populations in the world, Gaos said, but it is the largest in the U.S. Pacific Ocean "and the only known nesting colony in the Central North Pacific."

Why are there so few honu ea?

"This is a question we have asked ourselves for a long time," Gaos said. "There are several possibilities, including that the food resources that hawksbills require (particularly sponges and tunicates, in-

cluding invertebrates such as sea squirts) aren't in sufficient abundance around Hawaii to maintain large populations."

Hawksbills, he added, are also extremely sensitive to human impacts. They like isolated beaches and typically will not nest on beaches that have undergone major development.

"Hawksbills also typically nest under vegetation, versus on the open beach sand, and there are less beaches around Hawaii that have suitable (vegetated) habitat," he added.

On a more hopeful note, there may be more honu ea in Hawaii than people can

see, as "hawksbills do like isolated beaches and there are plenty of beaches around Hawaii where monitoring doesn't occur and nesting could be happening," Gaos said.

But even if new nesting beaches are found, he said,

honu ea will remain rare and continue to face serious conservation challenges, including mongoose, feral cat and rat predation; fishing gear entanglement in nearshore feeding habitats; and development and climate change alteration of nesting and feeding habitats.

But one threat hawksbills do not face is that of being eaten, as their flesh is "deadly poisonous" and declared kapu by Native Hawaiians, said scientist George Balazs, who retired after 34 years in NOAA's Sea Turtle Research Program. Balazs is a co-author of the study with Gaos, Erin L. LaCasella, Lauren Kurpita, Stacy Hargrove, Cheryl King, Hannah Bernard, T. Todd Jones and Peter H. Dutton.

"The alii (ruling class) treasured hawksbill plates for the adornment of sacred kahili (feather standards)," Balazs said.

For more information on honu and honu ea, visit GeorgeHBalazs.com.