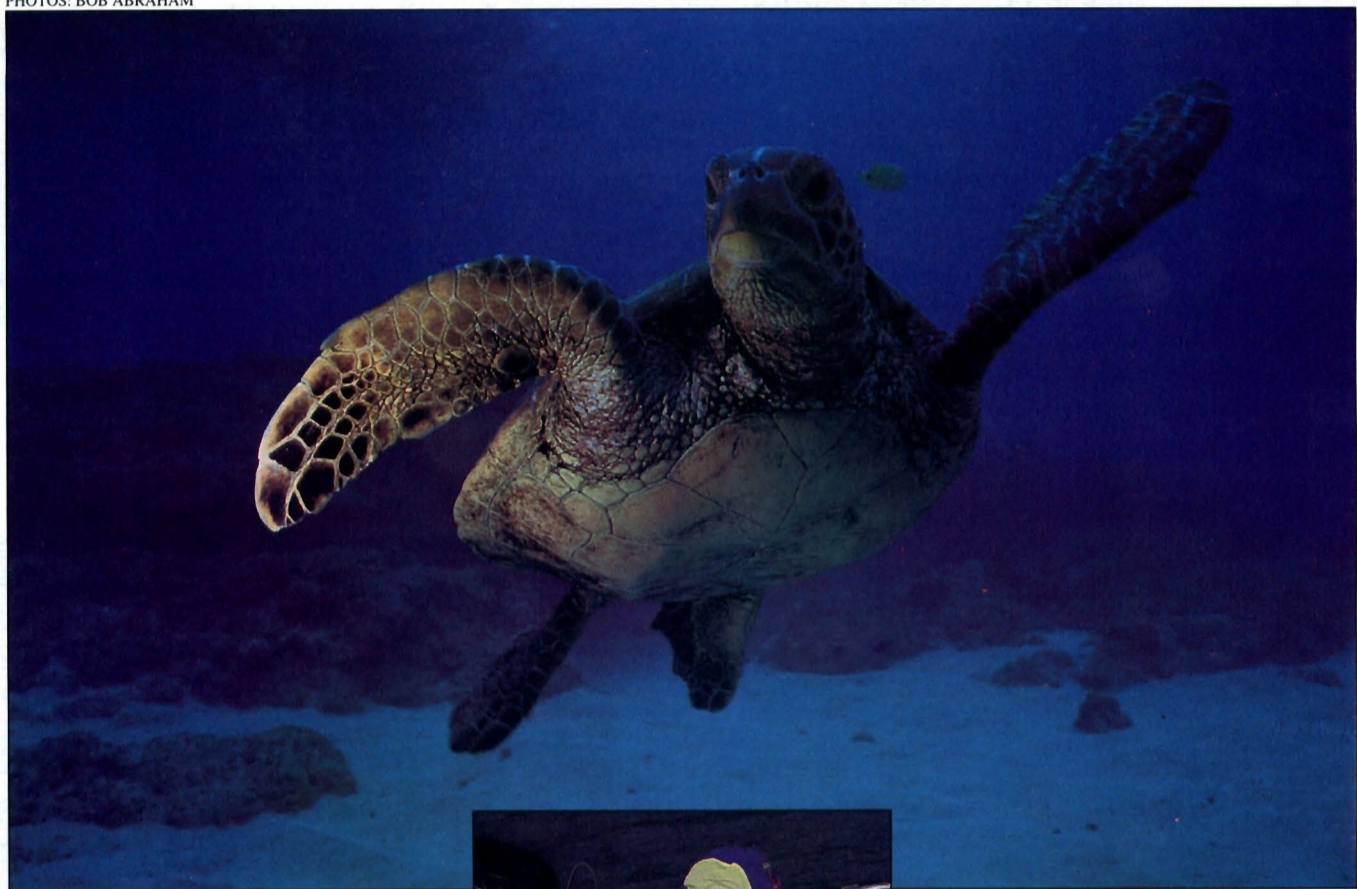


Tracking the Turtle

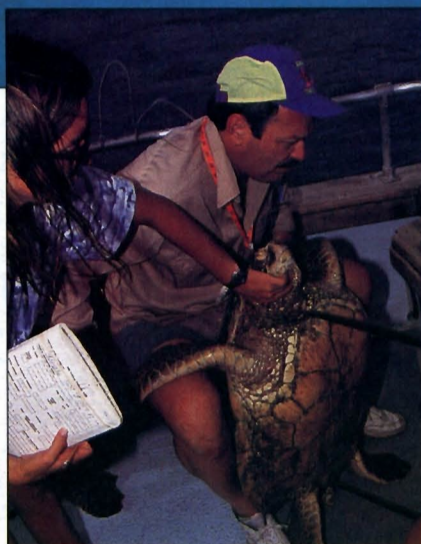
by Noreen Parks

PHOTOS: BOB ABRAHAM



The Punalu'u black sand beach lies embedded like a jewel in the forbidding lava cliffs of the Big Island's southeastern coast. Because rainfall is scarce here in the shadow of the ancient volcano Ninole, generations of Hawaiians valued this place for its secret source of fresh water. At the area's underwater springs, divers could fill their water gourds to quench the thirst of their villages. They named it "Punalu'u," or "diving spring."

Legend has it that a pair of super-



Off Waikiki, George Balazs and staff monitor a *honu* aboard Atlantis Reef Divers' *Explorer*.

natural turtles once came here from the far ocean and mated. The female laid a strange egg resembling a piece of native kauila wood that hatched into a turtle bearing a handsome shell. The young turtle possessed the magical ability to change into a girl, who would come to play with the village children and rescue them if they fell into the water. The people named the bubbling spring where the turtle lived "the rising water of Kauila" and they treasured the pure water it gave them.

Today a brigade of enthusiastic

students from the Marine Option Program at the University of Hawaii-Hilo, is returning a measure of kindness to the mythical turtle-girl. Under the direction of researcher George Balazs of the National Marine Fisheries Service, they're assisting in a recovery program for the *honu*, the green sea turtle. Along with the hawksbill and



On the Big Island, a research team readies a green sea turtle for tagging on the black sand beach at Punalu'u

NOREEN PARKS

leatherback turtles, the *honu* is listed and protected under the federal Endangered Species Act.

To learn more about green turtle numbers, their diet and their movements in Hawaiian waters, Balazs routinely captures them to check their vital signs. Besides working with volunteer groups at a dozen or so sites around the state, Balazs and his staff often ride the Atlantis Reef Divers' charter boat to study and tag turtles off Waikiki, giving passengers the opportunity to watch the scientific team in action.

At Punalu'u on the Big Island this morning, everyone's been watching the water. After scanning the choppy seas for nearly an hour, they've spotted a reptilian head peering curiously above the water like a submarine gyroscope. Four swimmers wearing wetsuits and snorkels swim toward the turtle, towing a tractor-tire-sized inner tube. Despite its sluggishness on land, the turtle's hydrodynamic body and strong flippers make it a fleet swimmer, clocking up to 15 miles an hour over short distances. Weighing as much as 400 pounds, the *honu* can also wield a hefty flipper chop. After some minutes of thrashing, the team manages to flip their quarry onto his mottled olive-and-brown back astride the rubber water taxi and bring him ashore, cheered on by their cohorts and a gaggle of camera-clicking visitors.

Lying in the shade of the tarp-

covered project headquarters, the *honu* wears a dour expression and attempts to prop himself up on his flippers, like an elderly bedridden patient confined against his will. His handlers place a towel gently around his head to calm him. Like many of the turtles captured here, this one sports a couple of small identification tags attached to his flippers during earlier tagging projects. The measurements and observations made today will be correlated with the turtle's past record. Recaptures like this help Balazs, who has been collecting census information for 18 years, to estimate turtle growth rates and population sizes.

Surrounded by onlookers, Balazs and two of the volunteers measure the turtle's carapace (the armor-like shell on his back side), the length of his flippers, and his softer, creamy yellow underside, or plastron. Weighing in at 67 pounds, this juvenile turtle's gender is undetectable. On average, green turtles don't sexually mature until they are around 25 years old. At that stage their carapaces are more than 34 inches long and the males' longer tails distinguish them from females.

The census data shows that green turtles stay in loose groups—like the Punalu'u herd of about 200—in rich feeding grounds to graze the *limu* seaweed from offshore rocks. "The turtles cling to the very edges of the islands," says Balazs. "The 'brim of the hat' is

hours, green turtles rest in underwater caves and ledges as deep as 70 feet.

For adults, however, it's not all surfing, swimming and gorging on *limu*, as the business of making turtle babies happens nearly 800 miles from the Big Island. "We have no idea why they don't nest here," Balazs says, "but turtle logic tells them to go to French Frigate Shoals," an uninhabited group of islets in the remote Northwest Hawaiian Islands.

Green turtles have swum the world's oceans for well over 200 million years, and some scientists believe them to be the only living descendants of a long-extinct group of para-reptiles. Arriving in the Hawaiian Islands probably 15 million years ago, they once bred on Kauai and Oahu, and until the early 1900s on Lanai. But human hunting and habitat disturbance wiped out those nesting areas. Today, following an ancient instinct to return to their natal beaches, they migrate to French Frigate Shoals. In the offshore waters, from May to September, males pursue females with legendary sexual ardor. Able to lay several clutches of eggs after a single copulation, the females go ashore to dig nests in the sand and deposit about a hundred golf-ball-sized eggs. Before turtle hunting began on a mass scale in the 1800s, there were probably close to 10,000 breeding turtles in the Northwest Hawaiian Islands. Today, roughly

narrow here, with deep drop-offs close to shore, and they are obligated to feed on vegetation in very shallow waters." (This turtle species is called "green" not because of any external coloring, but rather from the hue of its body fat, caused by this vegetarian diet.) Able to stay submerged up to two-and-a-half

a thousand females nest there, though not every year, for they need two or three years to recover from the breeding ordeal.

After two months the eggs hatch, and at some unknown signal, all the hatchlings begin to scrape furiously at the nest's ceiling and compact the sand beneath their tiny flippers to build up the nest floor, so they can break out. (At Kaneohe Bay on Oahu, Balazs once inserted a glass wall into a nest and used a video camera and microphone to record these details.) The mass exodus, usually timed for darkness, maximizes their chances of escape from beach predators like crabs and herons. Once in the water, the *keiki* turtles who survive the appetites of fishes and octopuses head resolutely to the deep blue sea. Their next life-stage remains a mystery, for small turtles are almost never seen. "We think the hatchlings stay out there up to three years and feed on high-protein foods like jellyfish and fish eggs," Balazs explains. "The ocean currents probably carry them back to land, and

then they switch their diet to algae and sea grasses."

Balazs has finished scraping the green, flakey remains of the turtle's lunch off the bony plates in his mouth (the turtle version of teeth) and noted a possible fishing-line scar. Hundreds of Hawaiian sea turtles are accidentally snagged every year by high seas drift nets, long-line nets and shrimp trawls. Discarded fishing gear also traps both adults and hatchlings, and turtles sometimes eat plastic debris that can block their digestion and poison them. And, despite steep fines and jail sentences for convicted poachers, sea turtles are still killed illegally for their shells and meat, or just for sport.

Fortunately, this *honu* and most of his fellow turtles at Punalu'u are free of one of the green turtle's biggest scourges—a kind of "Elephant Man" disease that causes tumors large enough to blind and, sometimes, drown them. Among the suspected causes are parasites, viruses and pollutants, but so far the exact culprit remains unknown.

Despite this serious tumor problem,

Balazs sees the Hawaiian green turtle's future as "very bright" and he credits public awareness with playing a significant role. "One of the dreams we have for Punalu'u is to get funds for an interpretive center, to educate people about the turtles," he says.

His ten-minute examination complete, the *honu* is released from his makeshift hospital bed. He waddles tentatively across the black sand, pausing long enough for the photos snapped by his new fans, then breaks into a reptilian gallop. There's no hesitation at the water's edge as the *honu*, a symbol of the ancient world, merges back into the timeless sea. □

For information on Atlantis Reef Divers' Waikiki research sails, call 522-5801. On the Big Island, July visitors to the Mauna Lani Bay Hotel and Bungalows can participate in the annual Turtle Independence Day. In this joint project with Sea Life Park, the hotel releases young *honu* which have been raised in the area's salt-water ponds. Call 885-6622.

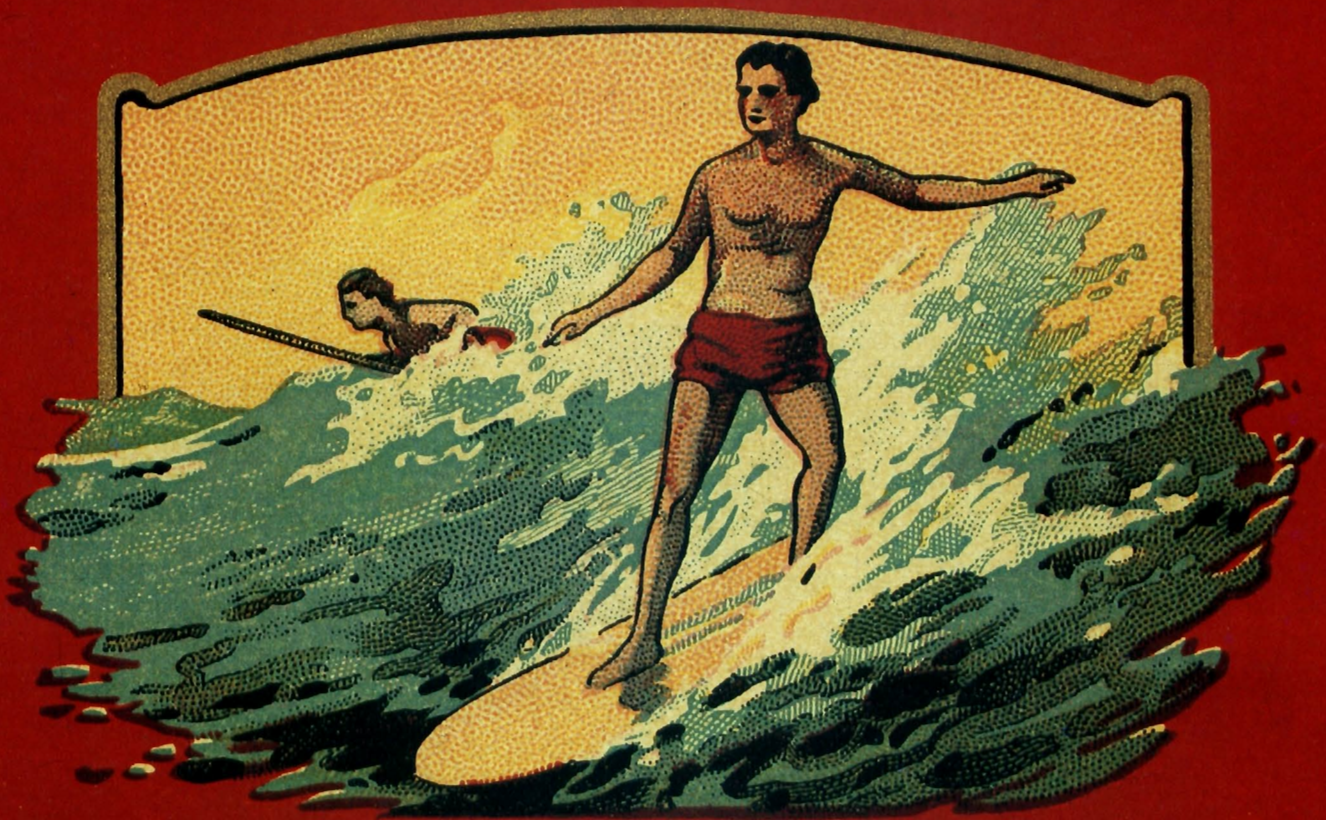
AUGUST 1992

Hawaiian Airlines

Magazine

SURF RIDER

BRAND



CRUSHED HAWAIIAN PINEAPPLE

Tracking Turtles • Pineapple's Future • Holy Ghost Church