

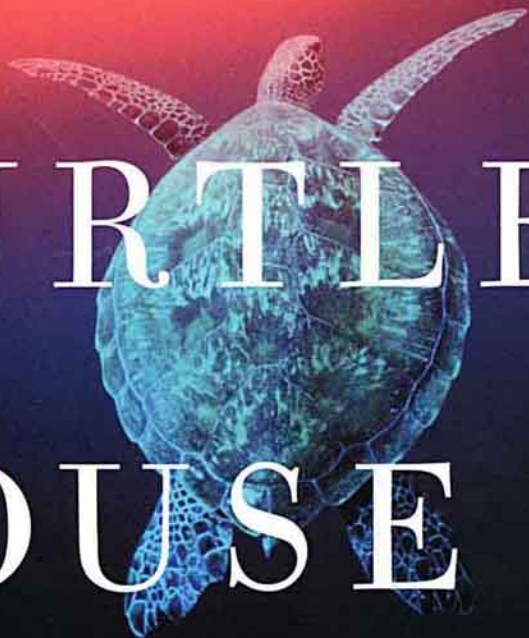
FIRE

THE GREEN SEA TURTLE  
AND THE FATE OF THE OCEAN

IN THE

TURTLE

HOUSE



OSHA GRAY DAVIDSON

# Fire in the Turtle House



*The Green Sea Turtle  
and the  
Fate of the Ocean*

Osha Gray Davidson

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The most popular Hawaiian turtle legend is that of Kauila. Historian Daniel Akaka, Jr., tells the story this way:

This takes place on the island of Hawai'i at a black sand beach called Punalu'u. Two turtles, the female named Honupo'okea (White-headed Green Sea Turtle) and the male named Honu'ea (Hawksbill), entered the beach of Punalu'u and dug out a pond which provided the people of the area with a supply of drinking water. Honupo'okea left a nest of eggs and when they hatched, all but one of the hatchlings entered the sea and that one hatchling lived in the nearby pond. The people named the baby turtle Kauila, for her shell was the color of a dark-brown native hardwood of that name. This female turtle grew in the pond and was known to possess special powers. She could transform herself into a little girl and would often be seen playing on the beach with the other children. When children were caught in the strong ocean currents while swimming she would go out and save them. When Kauila wanted to retire back to her home pond she would once again transform back into her turtle form. The people of Punalu'u loved Kauila as the guardian of their children and also for the spring that gave them pure drinking water.

*For Kauila and her children*

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# Acknowledgments

For many traditional peoples, turtles are the embodiment of wisdom and generosity. It must be true, because over the three years I've spent working on this book, the people who have devoted their lives to studying and helping protect these wonderful creatures have demonstrated both qualities in abundance.

First and foremost, I want to thank Ursula Keuper-Bennett for her help and encouragement in every phase of a project that grew like a turtle: slowly, inexorably, and seemingly without limits. She and her husband Peter Bennett have devoted their lives to a particular assemblage of wild turtles, the *honu* (Hawaiian for green sea turtle) of the eponymous Turtle House. I'm under no illusion why Ursula has been so helpful, and she's certainly never attempted to hide her reasons. These can be summed up in her motto: "Think of the *honu* first." Ursula believes that this book may in some way help the *honu* of Honokowai. I applaud her priorities and hope she's right.

Ursula appropriated that motto from her mentor, George Balazs. His official title is Leader, Marine Turtle Research Program, Southwest Fisheries Science Center, Honolulu Laboratory, National Marine Fish-

eries Service. But anyone who knows George knows that he holds an even nobler station in life: He is the *honu*'s best friend. And if he, too, went to extraordinary lengths to help this project, it was done in that capacity. Again, I only hope his faith proves justified.

There are so many others who have helped, supplying information, sharing memories, answering questions, taking time from busy schedules in order that I could better understand and write about the important and complex world of marine diseases. Most of them, too, have dedicated their lives to sea turtles, or to other creatures in the sea. Of course I appreciate their help. But my primary debt arises from their work itself. They are the protectors of the sea, and if the ocean world is to be saved, it will be because of their efforts and those of like-minded people throughout the world.

I also want to thank my longtime agent Alison Picard and my editor at PublicAffairs, Lisa Kaufman. To family and friends who have supported me in this work, I offer my heartfelt thanks and deepest gratitude.

## Chapter 2

# How Many *Honu*?

ON A LANGUID tropical afternoon in 1969, a young couple carefully edged their thirty-foot ketch into the harbor at Lahaina, a former whaling port on the west coast of Maui, Hawaii. The man was twenty-six years old, tan and fit, with a round Hungarian face that was dominated by a thatch of tousled brown hair, a prominent nose, and an exuberant bottle-brush of a mustache. The woman was slightly younger, tan and athletic also, but with a Modigliani face—long and angular and framed by straight blonde hair cascading to her swanlike neck.

As the couple secured their vessel to the dock, a peculiar sight caught the man's eye. Not far off, a flotilla of skiffs waited at the boat ramp. One at a time their crews were unloading something—he couldn't tell what—into the beds of pickup trucks parked by the wharf. The two columns, of boats and of trucks, converged to form a single assembly line. Curious, the young man walked over to see what was going on. As he approached he was surprised to realize that what the men were heaving into the trucks were live sea turtles, each one weighing a hundred pounds or more. Each boat held at least a half dozen of the marine reptiles.

The young man was outgoing by nature, and he struck up an easy conversation with the fishermen. They told him that the turtles were headed for the row of tourist restaurants that lined Lahaina's main street, where they would be slaughtered and served up as deep-fried turtle fritters and grilled turtle steaks.

If the sight of giant *honu* being slung around like sacks of flour repulsed the young man, the sheer number of turtles being taken concerned him even more. He was a recent graduate of the University of Hawaii with a master's degree in animal sciences, and he knew a bit about population dynamics.

"This looks too easy," he told his wife when he returned to their boat, casting his gaze out to sun-dappled waters where whales were once hunted nearly to extinction. "How many turtles can there be out there?"

In fact, Hawaiian green sea turtles, like the humpback whales of the nineteenth century, were spiraling toward extinction—though no one knew it at the time. It would become the young man's mission to save them.

George Balazs grew up in the Mojave Desert, a harsh and dry environment that is about as different from lush Hawaii as one could imagine. His father clipped turkey beaks at a poultry farm and his mother waited tables at a local restaurant. Balazs's ambition was to be a lineman for California Power and Electric. There were turtles there, however—desert gopher tortoises. As a boy, Balazs would sometimes find one plodding alongside the road and bring it home with him, where the creature would crawl around the family's backyard, chomping on the lettuce leaves George would feed it, before heading slowly back into the desert.

After graduating from high school, Balazs started college in San Diego. But he quickly grew restless after the first year and transferred to a community college in suburban Los Angeles where a group of friends lived. He worked full-time at a dry cleaner and took classes at night. In July 1963, at the age of twenty, Balazs married his girlfriend

Linda (with the Modigliani face). One warm evening the newlyweds went to a local drive-in theater. Before the feature, there was a five-minute travelogue about a hit movie of the previous year, a remake of *Mutiny on the Bounty*, starring Marlon Brando and filmed on location in Tahiti. Inspired by that film, the travelogue featured scenes of the mist-cloaked peaks and turquoise bays of the lush French Polynesian island. By the time the travelogue was over, Balazs was already making plans for getting to Tahiti.

"I just kept thinking that whatever we'd find there would have to be better than the life that was ahead of us in southern California," he says. "I didn't know where we'd end up, or what we were supposed to be doing with our lives, but I figured maybe there was a clue to it in Tahiti."

For the next six months Balazs worked eighty-hour weeks, economizing wherever possible and saving enough money to afford two round-trip tickets to Tahiti. In January 1964, the couple arrived in the capital, Papeete. *Mutiny on the Bounty* had sparked a tourist boom on the island and motel prices had skyrocketed, but through a retired American doctor they met on the island, the couple found a private house far from the tourist areas, which they rented for \$45 a month. The place was rustic but beautiful, surrounded by palm trees and with an open-air verandah that caught the trade winds and provided a panoramic view of the lagoon. They easily fell into a languorous routine. They ate French bread on the verandah for breakfast every morning as the sun climbed into the cloudless sky. Then they'd take a dip in the lagoon. Afternoons were spent riding their rented Vespa motor scooter out into rural areas where curious Tahitians would invite the young Americans in to visit.

Balazs had found paradise. "I kept thinking 'Oh, my God, is this real?'"

By exchanging their return airline tickets for cheaper passage on a French cargo liner, they managed to stretch their stay into a seven-month idyll. Finally, they spent their last franc and were forced to



backtrack to the United States. But they had a plan to return to Tahiti as permanent residents. They would work in California, save their money and move to Hawaii. There, George would earn a college degree, allowing him to have a career in Tahiti. Hawaii was to be a steppingstone for their return to French Polynesia.

The first part of the scheme went as planned. Living with his parents to save on rent, Balazs worked for a local bricklayer, carrying buckets of mortar up ladders in the desert heat. It was backbreaking work, but it paid \$7 an hour—a good wage for unskilled labor. Nearly all their money went into the bank. In less than a year, they had built up enough savings to move to Hawaii. The second part of the plan was also successful. They arrived in Honolulu in 1965. Linda found a job and George enrolled at the University of Hawaii, studying animal science and working part-time mowing campus lawns. To save money on housing, and because they had grown to love sailing, they bought a thirty-foot Tahitian ketch and lived aboard their boat.

Somehow, the final step of the plan, moving back to Tahiti, never happened. Hawaii, the steppingstone, became instead the cornerstone for their new lives. After George finished his BS, his professors encouraged him to get a master's degree, which he did.

By 1969 Balazs had had enough of academe. He wanted to clear his head of all the paper-writing, fact-checking, and laboratory experiments he had been doing for the past few years, and so he and Linda set sail, bumming around the Hawaiian islands. Eventually, their travels took them to West Maui, to the dock in Lahaina where they saw the *honu* being scooped out of the ocean to feed the tourist trade. Following that incident, George and his wife continued their wandering existence, hanging out in the Hawaiian Islands, watching sunsets, catching and eating fish from the surrounding ocean. In early 1971, one of George's former professors showed up at the marina where their boat was docked. The man, Balazs remembers, "wasn't pleased that I was kicking around in part-time jobs that had nothing to do with science." He urged George to apply for a position at the Hawaii Institute of Marine Biology on

Coconut Island, a beautifully situated research station located on Oahu's Kaneohe Bay. It was only a temporary job, working on a marine aquaculture program. Balazs wasn't sure. "Why don't you give it a try?" his former professor said. "You never know what it could build into."

"Why not?" thought Balazs, and took the position. He set to work formulating foods for a variety of commercially raised marine creatures, from shrimp to fish to sea turtles. He needed baby sea turtles for his research and was surprised to find that there was no ready supplier of either hatchlings or fertilized sea turtle eggs. So Balazs decided to just dig up some eggs from wild nesting turtles. He asked around to find out where the turtles nested locally. Again, he was surprised to find that no one knew for certain. Balazs's curiosity now prodded him to find out just what *was* known about the *honu*. He read everything he could on the subject, a task made easier by the fact that there was so little to read. Biologists knew astonishingly little about sea turtles in general.

Eventually, the Fish and Wildlife Service (FWS) provided Balazs with a clutch of eighty-five eggs, taken from a green sea turtle nest in the Hawaiian Islands National Wildlife Refuge, a remote outpost hundreds of miles to the northwest in the area known as the Leeward Islands. Balazs buried the eggs in the sand on Coconut Island, recreating as best he could their original nest environment. On a whim, he buried a microphone alongside the eggs, attaching the device to a small tape recorder. As the turtles matured inside the eggs, Balazs recorded the scratching sounds they made as they first moved around and then began to break out of their shells. He published a small note about the experiment—"Observations on the preemergence behavior of the green turtle"—in *Copeia*, a respected ichthyological journal. That led to a correspondence with Archie Carr, a professor at the University of Florida who was widely recognized as the world's leading sea turtle scientist. Carr urged Balazs to find out more about sea turtles in the Pacific, pointing out what Balazs already understood all too well, that in virtually every area—reproduction, population, ecology—scientists knew next to nothing about the ancient creatures. What they did know, Carr stressed,

was that sea turtles of all species were threatened throughout the world. (In addition to the green turtle, there are six species of marine turtles: the flatback, the hawksbill, the Kemp's ridley, the leatherback, the loggerhead, and the olive ridley.)

The three-month study kept getting extended, and the more Balazs worked with sea turtles, the more fascinated with them he became. Word of his interest got out. Soon, workers at the Waikiki Aquarium and Sea Life Park were telling people with questions about turtles to contact Balazs. To respond to people, he was forced to go ever deeper into the subject. The local newspapers ran a couple of feature articles about his work. Grade school teachers invited him to talk to their classes about the strange sea creatures (invitations he always accepted). Before long, Balazs was known throughout the islands as the man to see if you wanted information about Hawaiian sea turtles.

"That's pretty ironic," he readily admits now, "considering how little I actually knew."

Despite the media stories and the phone queries, Balazs still considered sea turtles little more than a fascinating hobby—something that had grown out of his temporary job.

That all changed in November 1972 with a phone call from a friend named Hilde Cherry. Cherry, an activist with many causes and boundless energy, was concerned that nothing was being done to protect sea turtles in Hawaii. She had asked herself the same question Balazs had that day on the docks in Lahaina: "How many turtles could there possibly be?" She had done some reading on the subject and had a gut-level sense that the answer was "Not many."

Once she discovered a problem, Cherry was not the kind of person who could just sit back and do nothing about it. She contacted the state-run Animal Species Advisory Commission (ASAC) and demanded that they hold a hearing on the status of sea turtles in Hawaii. Cherry was insistent. If only to get this woman off their backs, the commission scheduled a hearing.

"Okay, so I got the hearing," recalls Cherry, "but I'm no scientist.

What would I be able to tell them? We needed someone who could speak about the problems facing turtles, a scientist to back up the call for protection with evidence."

Cherry called George. Balazs didn't want to testify.

"What the hell do I know about it?" he complained to Cherry. "I don't have any data on this."

Cherry wasn't impressed. "George, we need you," she said. "You do this right now."

Faced with the force that was Hilde Cherry, Balazs had little choice in the matter. In fact, he had even less maneuvering room than he had thought. Without his permission or even his knowledge, Cherry had already placed Balazs's name on the ASAC's agenda.

At a few minutes past 1 P.M. on 1 December 1972, nine ASAC commissioners convened their meeting in the spacious lieutenant governor's conference room at the Hawaiian state capitol building. The meeting got underway with a three-hour discussion on the status of the Hawaiian green sea turtle. Eugene Kridler, the manager of the Hawaiian Islands National Wildlife Refuge, was the first to testify. He told the commissioners that his agency already protected the *honu* at their refuge breeding grounds. The only change necessary was to prohibit turtle fishing in the leeward waters. That action should be taken immediately, Kridler added. "I don't think we have the luxury of time that some might think," he told them.

Kridler added that Cherry and other environmentalists went too far in endorsing further restrictions. More than 700 sea turtles had been tagged in the refuge, he said, going back to 1964. The manager concluded that calls for a complete ban on the taking of sea turtles throughout the Hawaiian Islands were unwarranted, although he said that more research was needed. In the discussion that followed, one commissioner agreed that a full ban on turtle fishing was unnecessary and called commercial turtle landings in Hawaii "insignificant."

These views were based on an estimate that there were up to 5,200 turtles in the Hawaiian breeding population at the time. This number,

while smaller than it would have been before European arrival, still represented a viable population. The problem was that the estimate was wildly inaccurate, based on extrapolations of hit-and-miss surveys done with no regularity or anything approaching scientific precision.

The methodology used to arrive at the figure of 5,200 reproducing turtles does not instill confidence. A 1971 report explained:

In 1965, 86 adult turtles were tagged ... on 3 islands during August; an average of 5 turtles was tagged on each of the 17 days tagging occurred. Thus, if new turtles arrived and departed each day, this would mean roughly 150 using each of the 3 islands during the month, or a total of 450 for these 3 islands for August. But this is a minimum figure for several were lost or missed each day and from 5 to 20 were actually observed each day. Using 10 as a more realistic average, the estimate for these 3 islands then becomes 900. If we consider those using the other 2 turtle islands in the atoll, the August population could range from 650 to as many as 1,300.

The June and July breeding populations are probably higher than in August for as many as 60 turtles have been counted on a single island at one time. The total population using the atoll may be very large. Hendrickson [the author of a 1969 report] discussed the August 1965 estimates and noted that they were "highly tentative," but suggests "that one might assume twice the August number to represent the month of July and take the same increment for the early part of the season. One would then obtain a figure of between 2,600 and 5,200 turtles as the Hawaiian breeding population (1 + 2 + 1 times 650 - 1,300, and ignoring all other island nestings)."

Even Hendrickson cautioned against putting much stock in these numbers. "While it is very important to state flatly that this estimate has little basis and is *not* to be trusted, one can at least say that it does not appear to conflict violently with any other available quantitative information."

But other quantitative information was even more speculative, and the already questionable figure of 5,200 turtles would have included many nonbreeders. Despite their unreliability, these figures were trotted out before the commission as the basis for inaction. Balazs knew that all this was nonsense and he was dumbfounded and infuriated by the discussion.

After Kridler finished testifying, it was Balazs's turn. He was, he would later recall, "scared like hell." Balazs had no speech prepared for the occasion and began by distributing a number of documents; the first was the commercial sea turtle catch statistics for the past few years. In 1963, fishermen reported taking only 380 pounds of sea turtle meat. In 1972, that total had jumped to 25,583 pounds, a 67-fold increase in less than a decade. Struggling to keep his anger in check, Balazs pointed out that these figures reflected something more than the "insignificant" amount one commissioner had alleged. The reason for the skyrocketing rise in the turtle catch, Balazs explained, was due almost entirely to an increase in tourism and the desire of mainland and foreign visitors to eat sea turtles.

The official minutes from the meeting give little of Balazs's testimony, other than to say that he "made a strong plea for the preservation of the green sea turtle."

His recollection of that meeting is that he backed up his call for protecting the *honu* by citing turtle experts from around the world who had done reliable population studies.

"There were clearly sea turtle problems elsewhere, distant from Hawaii," he explains. "Serious ones. Could Hawaii's situation be so different, especially in the face of no protection, no meaningful regulations, and substantial hunting by very efficient methods (use of bullets, scuba, and turtle tangle nets hundreds of yards long)? Or, was it 'simply' that our heads were in the sand, too many other things keeping state and federal folks occupied? I said that you can't exploit them like a copper mine. You can't *mine* them. You've got to *manage* them and harvest them, rationally. Things were wide open in Hawaii. How

on earth could our turtles sustain this without any limits whatsoever?”

Balazs wasn't prepared to expose all the flaws in the rosy population estimates presented at the meeting, but within a few weeks he submitted an additional statement to ASAC members pointing out that the 700 turtles tagged by Kridler and his assistant were *not* nesting turtles—and, in fact, weren't even necessarily females, as some commissioners had mistakenly believed. Kridler hadn't intentionally misled anyone. The misunderstanding came about because the term “tagged turtle” is usually synonymous with “nesting female.” Elsewhere, turtles were invariably tagged when they came ashore, and only females came ashore, and then only to lay eggs. Except in Hawaii. Perhaps because the *honu* were at the northern edge of their range, Hawaiian turtles, both male and female, regularly came ashore to bask—warming themselves in the sunlight. Virtually all the 700 turtles tagged over the years at the refuge were daytime baskers, males and females. In that time, a total of just 15 turtles had been tagged in the refuge at night while nesting. No population estimates could be derived from the figures provided, asserted Balazs, certainly none that implied reproductive potential.

Balazs left the meeting angry and exasperated. But in a strange way he was also excited. When he walked out into the warm Honolulu sunshine, Balazs had already decided what lay ahead. Somehow, he would go to the refuge that next summer, identify the heart of the *honu*'s breeding herd, and conduct the first in-depth, scientifically rigorous population study of the Hawaiian green sea turtle. And if this weren't ambitious enough, Balazs (who, despite his growing reputation, was still just a low-ranking temporary employee of the University of Hawaii) saw this project as just the first step in a systematic, long-term tagging and monitoring program in the Hawaiian archipelago. As when he decided to go to Tahiti years before, Balazs wasn't sure *how* he was going to pull off his plan. He just knew that he would.

Within hours of the fateful ASAC meeting, Balazs was already planning his campaign. Funding was, as always, a critical issue. He turned to

the FWS for support, a logical place to start, since the division controlled the refuge where he proposed to work. But the FWS turned him down. Their reason was that it already had “an extensive tagging marking program” in Hawaii.

Five months later the same FWS division chief would write Balazs asking for information on green turtles. The agency was reviewing the status of sea turtles in general and, the man wrote, “One difficulty we have encountered ... is the lack of rigorous, up-to-date data on the Hawaiian and Pacific populations.”

After several frustrating weeks making phone calls, writing letters, and following up leads, Balazs managed to secure a small grant from the New York Zoological Society. The money came through just in time, and at 8:30 A.M. on 1 June 1973, Balazs climbed aboard a red-and-silver twin-engine DC-3 “Gooney Bird” and began the 500-mile flight northwest from Oahu to French Frigate Shoals, a coral atoll composed of ten tiny islands, mere specks of sand and scrub. After passing over the main inhabited islands of the eastern section of the archipelago, the WWII-vintage plane headed out over the open Pacific. Balazs gazed out a small window. As the hours passed, only water—flat and green—slid by below them. Finally, in the distance something appeared that looked like the deck of a small aircraft carrier. It was Tern Island, the only inhabited spot for hundreds of miles. The island measured just 3,300 feet by 600 feet, and nearly all of it was taken up by the runway the Coast Guard used to supply their crew of twenty manning the LORAN radio station there, which broadcast directional signals used by planes and ships.

French Frigate Shoals are equal parts isolation and splendor—although it's the isolation you notice first. Charles Welch, who spent several months on Tern Island, recalls:

Just the name French Frigate Shoals instilled feelings of dread and fear into your mind. There were not many facts known throughout the Coast Guard about French Frigate Shoals, mostly rumors and innuendo. It was spoken of only in whispers or as a threat. No one



actually knew anyone who was stationed there to ask questions of. But a friend of a friend knew someone who once did a tour of duty on French Frigate Shoals and they were allegedly never the same after returning from what was known as: The Worst Duty Station in The Coast Guard. However, those few fortunate ones, or maybe unfortunate ones, who served a tour of duty there would probably say today that they would not trade their experience for a few days on the beach with beautiful girls.

Another "Coastie," who served at Tern Island in the late 1960s, called French Frigate Shoals the ultimate isolated duty, the destination used when threats were made to send someone to the middle of nowhere. As the men assigned there climbed off the plane they were greeted by a sign reading: WELCOME TO FRENCH FRIGATE SHOALS INTERNATIONAL AIRPORT. POP. 20. ELEVATION 6 FT.

Balazs was accompanied on this first visit to French Frigate Shoals by David Olsen, the acting wildlife administrator of the refuge who had actually done most of the turtle tagging over the previous years, and by John Wheeler, a volunteer student from the University of Hawaii. For Olsen and Balazs it was the beginning of a long-term friendship. The refuge worker wasn't much older than Balazs and he shared George's love of turtles. That first night on Tern Island the trio went out at sunset and began looking for nesting turtles. They found none, nor any on the next night. This wasn't much of a surprise despite the fact that historically hundreds, if not thousands, of turtles had nested each year on the beaches of Tern Island. Many had been slaughtered by commercial fishing ships over the years. The final blow to the breeding aggregation came, ironically, when the military *expanded* the island to build the runway there in 1942. Through dredging and landfill operations, the eleven-acre island grew to cover fifty-seven acres. But the resulting shoreline was made of coral gravel and hard-packed sand—an environment unsuitable for turtle nesting. Balazs determined that nearly 20 percent of Hawaii's total turtle nesting habitat was destroyed in the expansion.

On 3 June a Coast Guard boat ferried them over to East Island, six miles southwest of Tern. As small and desolate as Tern Island was, it must have seemed like a spacious resort compared to East Island. The place Balazs would call home for the next several months was only one-fifth the present size of Tern, covering a mere twelve acres. The only structure on the island was a single wooden pole rising bleakly from the shrub- and grass-covered sand, a relic of the Coast Guard's old LORAN station there. East Island did have a significant population, however. Of birds. The place was packed with more than 70,000 screeching sooty terns. Even the constant trade winds couldn't dispel the acrid stench of ammonia coming from the mass of bird droppings, an eye-watering smell. The men pitched their tents, and a few minutes before sunset they began looking for turtles coming ashore to nest. In the spreading darkness, Olsen was leading the way with a flashlight strapped to a band on his forehead. The light spooked a masked booby bird, which took flight. Blinded by the light, the bird flew straight into Olsen's head, its beak piercing his scalp. Olsen wasn't hurt badly, but blood from the laceration flowed freely down his face. Balazs took one look at his bloodied friend and wondered: "Oh my God, is this what it'll be like on East Island?"

Once they patched Olsen up, the men continued their "turtle walk." Later that night they encountered, measured, and tagged their first nesting turtle. It was a historic first for Balazs.

The next day, it was time for Olsen to move on. The two men said good-bye, and Olsen climbed aboard a boat and sped away. Balazs and Wheeler were left alone on the tiny island. They had a couple of small tents, a supply of food and drinking water, a barely serviceable walkie-talkie (for raising the Coast Guard station on Tern Island in case of emergencies—such as the tidal waves that periodically washed over the tiny, low island), and materials for tagging turtles. It was during this period that Balazs developed what might be called a Pop-Tart® addiction, comfort food for the long difficult days on the isolated island. The scorching Pacific sun made it impossible to sleep during the daytime

inside the stifling tents. At night, sleeping in their clothes, Balazs and Wheeler awakened every hour and a half to walk a complete circuit around the island. Despite their exhaustion, sleeping between walks was nearly impossible thanks to the birds, which seemed to shriek just as the men started drifting off.

In later years, Balazs would spend the entire summer on East Island by himself and would come to think of the tiny island as both a paradise and a prison. There were gorgeous nights when the young researcher was enthralled by the tropical night sky with no lights around to dim the fiercely burning stars and was lulled by the rhythm of the pounding waves. But at other times he suffered from insomnia, anxiety attacks that sent his heart racing uncontrollably and a sense of isolation so profound that he would sit on the shore looking out at the Pacific and weep into the sand. He faced southeast, toward his family. At such times, his thoughts took a morbid turn, musing on the possibility of someone dying on the island. "I think it likely," he brooded in his writings. "What a God-awful place to die, if alone. Buried here, ok, or ashes. But not dying."

The bad times, the lonely times, weren't always improved by the presence of others. Some individuals provided companionship and a respite from the overwhelming isolation of the place. Others, however, had full-scale breakdowns on the island during which they were certain that ghosts walked the atoll. Some believed the island itself was a malevolent presence. Still others were convinced that strangers were going to land on the island in the dark in search of buried treasure and murder them.

When Balazs returned from East Island late that summer, he brought with him treasure of another sort: scientific data on the size of the *honu* breeding herd. Instead of thousands of females crawling ashore to lay their eggs at French Frigate Shoals (as others had estimated), over the course of the summer Balazs had counted just 67 nesters. While a few turtles nested on two other islands at French Frigate Shoals, Balazs determined that over half of the breeding herd used East Island as their nesting site.

The essence of Balazs's study at French Frigate Shoals was this: the fate of the *honu* population throughout the entire 1,500-mile-long Hawaiian archipelago depended upon fewer than 150 individual females nesting each year.

Balazs wasted no time in spreading the word about the precarious status of the *honu*. His new goal was to get legislation passed to protect the turtles, and as soon as possible. Over the next several months Balazs testified at numerous public hearings, wrote articles both for scientific journals and popular environmental magazines, wrote countless letters to the editors of Hawaiian newspapers, and hounded state legislators. He also worked behind the scenes, acting as an unofficial adviser to the ASAC. Even before his summer at East Island, Balazs had written a draft for legislation protecting sea turtles, a document that became the basis for the first state law banning the commercial killing of *honu*. Within days of his return to Oahu from his turtle monitoring on East Island, Balazs, now armed with scientific data to back up what he already believed to be true, was the key expert witness at a public hearing on the new law.

Bruce Benson, a respected science writer for the *Honolulu Advertiser*, became an ally in the battle, writing several articles on the plight of sea turtles. Benson's 23 September 1973 article about that first public hearing highlighted Balazs's findings.

Green sea turtles in Hawaiian waters are destined to become a rare and possibly extinct species if they continue disappearing from the ocean and into the bellies of tourists, a scientist said in a public hearing at the Bishop Museum last night.

George H. Balazs of the Hawaiian Institute of Marine Biology said turtle catch statistics revealed that "extremely large increases" have occurred in the turtle catches of recent years, linked closely to the rise in tourism.

"It is interesting to note that the pounds of turtles taken since 1963 follows increasing trends of tourism, and that much of the

incentive to exploit turtles is provided by restaurants and hotels that depend on tourism for a large portion of their business," Balazs said.

"If this is the case, it then logically follows that a few fishermen are eroding a unique Hawaiian resource to provide an exotic luxury food for short-term Mainland visitors. It is unfortunate that those to suffer the most from this practice will be the low-income, less fortunate residents of Hawaii.

"The turtles that could have been captured for home use to provide additional meat will now be all the more difficult to find."

Letters began pouring in from people sharing their concerns about the dwindling number of turtles. A helicopter pilot wrote Balazs that since 1966 he had been making informal counts from the air of the sea turtle population at Na Pali, a relatively remote part of the island of Kauai. "I could sum up a ten year, almost daily observation of Na Pali, with one statement," the man wrote. "The population of sea turtles has declined by at least 90 percent."

Another individual wrote, anonymously, revealing how he had witnessed many turtle hunters killing up to fifteen to twenty turtles a day using power heads—explosive charges shot from spearguns. "The turtle population on Kauai has been depleted to a point where something has to be done to curb the greed of these few fishermen," urged the informant.

Balazs cited these letters at public hearings and in his many letters to the editors of newspapers. Hawaiian public opinion began to shift toward protection. The manager of a large grocery store chain selling turtle meat wrote Balazs thanking him for his work and promising not to order any more turtle flesh.

"We will sell out our present stock of 25–30 pounds," he wrote, "but will not advertise this remaining stock as planned in recognition of your work."

Not all reaction was positive, of course. Angry turtle hunters made their feelings known, too, and Balazs even received a letter from an

obviously confused Canadian seafood broker who wanted to know if George could supply them with frozen turtle meat.

By early 1974, public opinion was clearly on the side of protecting the *honu*. In May of that year, the state's Department of Land and Natural Resources, Division of Fish and Game (DFG), adopted a landmark measure called "Regulation 36." The centerpiece of the regulation was a ban on the commercial exploitation of green turtles in Hawaii—the first such protection in over a century of slaughter. While many individuals and groups worked hard for Regulation 36, the measure owed its existence to one person: George Balazs. On its own, the DFG wouldn't even have considered such a regulation, much less adopted it, for the division knew little about sea turtles and seemed to care even less about protecting them. Acting on his own initiative, the temporary worker at Coconut Island conducted the scientific work proving the need for the regulation (drumming up the funds needed for the work himself), drafted its framework, and galvanized public support for it.

But Balazs didn't have time to celebrate adoption of the regulation. He considered Regulation 36 merely a step in the right direction, a holding action. Almost from the beginning of his efforts to protect sea turtles, Balazs had his eyes on a larger prize. He wanted the *honu* protected under the far more comprehensive and formidable federal Endangered Species Act (ESA). Three species of marine turtles had been included in the ESA of 1973: Kemp's ridley, hawksbill, and loggerhead sea turtles. Balazs had already started his campaign to add the green turtle to the list—writing letters, building networks, and always continuing and expanding the turtle tagging and monitoring program at French Frigate Shoals, which supplied the scientific evidence needed to back up any new protections.

Even while he was hard at work on this front, Balazs was also pursuing creative strategies to protect sea turtles from commercial exploitation. In late 1974 he noticed \$500 turtle-skin purses for sale in an exclusive Honolulu store that catered to tourists. He immediately wrote the store manager, pointing out that the sale of items made from the

three turtles listed under the ESA was illegal. "No indication was given on the purses as to which type of sea turtle had been used," Balazs wrote. "If you are unable to adequately show that it is *not* one of the three I have mentioned, you could very well be in violation of federal criminal statutes." Just to make sure the store did the right thing, Balazs sent a copy of the letter to the federal government agent in charge of enforcing the ESA in Hawaii. Nor was this an isolated incident. Balazs wrote many such letters during those years. Honolulu was still a growing community at that time with a small number of specialty shops. Storekeepers must have learned to recognize Balazs (his picture was in the paper more and more often) and shuddered when they saw him coming if they were selling contraband turtle items. It's easy to imagine store employees scurrying around as Balazs approached, frantically shoving turtle purses and jewelry into boxes below the counters.

Nor did he limit his activism on behalf of turtles to Hawaii itself. When he spotted an article in *Vogue* magazine about a formal White House dinner at which Green Turtle Soup was on the menu, Balazs wrote directly to First Lady Betty Ford, politely pointing out that the turtle was threatened worldwide and that the government was currently considering listing the animal under the ESA. "Hopefully," he wrote Mrs. Ford, "you will ... see fit to substitute the genuine Green Turtle soup on your menu with one of the equally nutritious imitation turtle soup recipes."

If neither the threat of legal repercussions nor moral suasion was the right tool for a given situation, Balazs used other strategies. In 1976 he ran across an advertisement in a surfing magazine for a waterproof skin lotion containing turtle oil. He fired off a letter to the magazine's editor:

By running this advertisement, you are, in essence, encouraging surfers and other readers active in ocean sports to use a body lotion which contains sea turtle oil. I question the wisdom of such practices. Sea turtles are known to be a dietary component of large sharks, especially the tiger shark. For example, in a shark control and

research program conducted by the State of Hawaii in 1971, 18 percent of the tiger sharks captured were found to have turtle parts in their stomachs.

In 1974, his science-driven activism led to his appointment to the Marine Turtle Specialist Group of the most prestigious international conservation organization, the International Union for Conservation of Nature and Natural Resources (IUCN). Within two years Balazs was named cochair of the group, an unprecedented appointment for someone who still signed his letters "Junior Marine Biologist."

Despite these other activities, working to get the green turtle protected under the ESA was always Balazs's top priority, aside from scientific research itself. Bureaucracies work slowly, however, and it took four years to win that battle. The National Marine Fisheries Service in particular dragged its feet, drawing out what should have been a short process. Finally, in September 1978, the *honu* was officially listed as "threatened" under the ESA and afforded the penultimate level of protection possible under U.S. law (only a listing of "endangered" brought more stringent controls). Many others were involved in this larger battle, but Balazs was the central player in the fight to get the *honu* listed.

"George almost single-handedly saved the Hawaiian sea turtle," says Mike Salmon, an eminent sea turtle biologist and conservationist in his own right. "He's one of the true heroes of the conservation movement."

With the increased protection provided first by Regulation 36 and then the ESA, the number of nesting turtles in Hawaii, which had declined to a critical level, slowly began to grow. Annual nesting figures at French Frigate Shoals provided by Balazs showed that nesting took place in cycles, with most of the turtles returning to lay their clutches every two years (some took three years, others even longer). So while there were "down" years in which few turtles came to French Frigate Shoals, these were balanced by "up" years with ever-increasing numbers. In 1978 (the years the *honu* won protection under the ESA, and



also, coincidentally, an “up” year in the turtles’ reproductive cycle), slightly more than 100 nesters were counted at French Frigate Shoals. In 1981, the next “up” year, nearly 200 females returned to French Frigate Shoals to lay eggs. In 1984, Balazs counted nearly 300 nesters.

The overall trend was encouraging. Once teetering on the edge of extinction, the *honu* were on their way back. At least that’s how it appeared until FP showed up.