FOCUS

The Honolulu Advertiser Sunday, August 2

Under Hawaii's billowing blue ocean

Creatures in

■ More green sea turtles with deadly tumor disease ■ Island-shielding coral reefs da

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By Ursula Keuper-Bennett

I bet you can go through a whole day without giving sea turtles any thought but, for me, they are magical. I am not just talking any sea turtles here, but Hawaiian green sea turtles, and not just any Hawaiian green sea turtles, but the population that frequents the turtle house in Honokowai, West Maui.

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Every summer we cross the Pacific (a 13-hour ordeal from Toronto, Canada, to Maui) just to visit this turtle house. For eight weeks, we dive twice a day at this same location.

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Yes, sea turtles have faces. That is how we tell one turtle from another. And their faces are as individual as yours and mine. Brown, leathery plates form patterns and markings unique to the turtle and fixed for life.

On a good day, almost a dozen turtles will snooze and hang out with others to talk story at our site. Much like humans, the most active turtles are the youngsters. Adults expend as little energy as possible and can be divided into two camps — the Snoozers, and the Vigilants who tend to rest in the higher regions of a turtle house to get better looks around.

Animals that have known us from other years seem to find us as fascinating as we find them. Their eyes follow our every movement.

The others are wary and distrustful. Should we come uncomfortably close, they up and leave. Some will glance back at us and rub a flipper several times across one eye. I concluded they just had itchy eyes, but my husband has since convinced me this gesture is a sea turtle's "one-finger salute" for being forced to leave its favorite spot.

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Such treatment is not reserved for turtles. There is plenty of videotape of a turtle hovering patiently (I don't notice. My attention is elsewhere), only to sit on me! The results are always the same: The feeling of something big touching my leg sends me vertical, my quick movements alarm the turtle and we both flee in opposite directions. Only my husband finds these moments amusing.

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"The nastiest pollutants were tested for. Essentially, there was no difference in the tissues of animals with and without tumors, and the levels (of contaminants, when detected) were barely at the detection limits of this extremely sophisticated machinery."

Anyone who sees a turtle stranded on the beach, dead or clearly in trouble, should call:

- **The National Marine Fisheries Service, 943-1221, or**
- **The state Conservation Hotline, 587-0077.**

State — or Legislature — should curb overfish

By Patricia Tummons

The efforts of the state Department of Business, Economic Development and Tourism to sell Hawaii fish have been phenomenally successful, from a public relations perspective.

DBEDT's campaign made headlines recently in The Advertiser ("A world's fare here," July 11). In addition, an entire pull-out section of an interisland airline's in-flight magazine praised Hawaii seafood. Pictured prominently on the cover of that section were three slipper lobsters and two small onaga, red scales glistening.

The marketing effort is not confined just to Hawaii. DBEDT has been taking its Hawaii Seafood Festival on the road, to fish shows in Boston, Seattle and elsewhere.

But from the standpoint of wise resource management, the campaign is an out-and-out disaster. Imagine the state of Washington undertaking a campaign featuring recipes for spotted owl by famous chefs, or Ecuador marketing trinkets carved from shells of the giant Galapagos tortoise.

Hawaiian lobsters and the onaga aren't on any endangered species list yet, but local stocks are not healthy.

Populations of Hawaiian lobster crashed in the 1980s after a few years of ruthless commercial plundering. This year, the commercial season has been closed after just one month.

In the case of onaga, at least part of the problem is attributable to the premium placed by restaurateurs on small, plate-sized fish. Onaga aren't capable of reproducing themselves until they're at least platter-sized.

In fact, since 1988, more than 70 percent of the onaga caught in the main Hawaiian Islands have been immature. One needn't be a rocket scientist to predict the inevitable result: With fewer onaga reaching maturity, the numbers of fish spawned can be expected to decline.

Other measures used by the experts at National Marine Fisheries Service and the state's own Division of Aquatic Resources (a branch of the Department of Land and Natural Resources) bear out the predicted decline.

In the 1950s, fishermen were catching 600 pounds of onaga for each day at sea in waters off the main Hawaiian Islands. By the early 1990s, the catch rate was as low as 150 pounds per day, or one-fourth what it was 40 years ago.

The Advertiser has reported

on the decline of fisheries worldwide ("World's fishermen hit bottom in pursuit of ocean's bounty," Aug. 14, Page A21). An article on the cover of the March 20 Focus section also warned of depleted fisheries.

Below that, The Advertiser carried an article by Jeffre

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If you are concerned about the serious decline of onaga (also known as 'ula 'ula koa'e or red snapper), opakapaka (pink snapper) and other important food fish in waters near the major Hawaiian islands:

- **Call the state Division of Aquatic Resources, 587-0100. Let director Henry Sakuda and program director Eric Onizuka know you support rule-making to assure the long-term survival of state fisheries.**
- **Let lawmakers and candidates know you want action. Urge them to support sufficient funding for the Division of Aquatic Resources to carry out its responsibilities.**
- **Be aware of this irony: The state, under current policy, depends on signals from fishermen that fisheries are in distress. But fishermen will be the last to say there is a problem.**

"No management measure is acceptable to fishermen because they will have to take a loss," said Robert Schroeder, senior scientist for the Western Pacific Regional Fishery Management Council.

Schroeder and others point out that it is in the long-term interests of fishermen to have restrictions that allow fish stocks to be replenished.

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Balazs said one theory is that the increase in ultraviolet radiation may

lots of turtles, the most coveted location is often where someone is already sitting. Then we witness turtle drama, up close and personal.

An incoming turtle sees her spot is already occupied. She hovers over the squatter, body language saying, "I'm gonna land now." She is ignored by the squatter, much as we hu-

Turtles: More study is needed to determine tumor causes

FROM PAGE B1

more than 200 hours of direct observation. And we have learned that the turtles' lives aren't nearly as rosy as I've painted.

An expert told me *fibropapilloma* is a disease of adult turtles, but at Honokowai, even our youngest have it.

The very first turtle we ever saw was in 1988 — a youngster we called Clothahump. Each summer we'd see her. In 1992, she developed suspicious white spots on her eyes and throat. Last summer, we saw her just once. The sight of both her eyes clogged with tumors, tumors on throat and armpit left both my husband and me sobbing under 20 feet of ocean. (It is hard to cry underwater — your face contorts and water floods your mask.)

Turtles die. I know this. Tiger sharks get them. They get killed by propellers. They get snagged in gill nets and drown. But such deaths are humane compared to *fibropapilloma* tumors.

The author with Aikane, "the only Honokowai regular without tumors, so far."

The disease often starts in the eyes, and spreads. Particularly gruesome are tumors growing from the corner of the mouth. Large tumors interfere with both breathing and eating. Eventually, blinded and wearing a lei of tumors, the turtle finds swimming difficult. The turtle becomes emaciated and dies.

But the biggest, most bitter pill for me to swallow is this. Dive at Airport Beach about a mile south, and the young turtles seem fine. Snorkel at Honolua Bay (about 5 miles to the north), and there is no hint of the disease on the youngsters there. But at Honokowai, tumors run rampant.

I no longer welcome the sight of new little "recruits" settling into shallow water to make Honokowai their home. The odds are much against them.

My husband and I play things cooler now. We don't give turtles names any more — just numbers. Give a turtle a name and you make it a friend. We're sick of seeing our friends develop tumors and we're tired of speculating which of our friends is the turtle skeleton sunbleached on our lanai.

I write this because our turtles can't. These creatures need help. Only modest headway has been made against this disease. But mainly I am writing with the hope that some kid who loves the ocean and its creatures reads this and sees my words as inspiration.

Maybe she'll turn to her mom and say, "When I grow up I want to be a marine biologist. I'm gonna fix tumors."

Study hard, kid.

□

Ursula Keuper-Bennett lives in a suburb of Toronto, Ontario, Canada, where she teaches sixth grade. She and her husband, Peter, have spent two months in Hawaii every summer since 1987 to be with and learn more about their turtle friends.

8/15/94 All Star-Bulletin

Fish-eye view of plan for boombox test

If dolphins, whales and fish could speak, this might be what they would say to us about the "boom box" global-warming experiments planned for the oceans off Kauai and California.

"We inhabitants of the ocean get along swimmingly without your intrusions. We migrate, breed and play joyfully in the conscious rhythms of life.

"Many species of aquatic mammals have sophisticated sound-imaging capacities. These systems have evolved over millions of years and allow us to feed and navigate. Science does not understand how these systems work. Nevertheless, scientists are ready to blast sounds across the ocean for 5,000 kilometers in all directions to test for global warming.

"It is possible that these sounds will interfere with our underwater sensing capabilities. This could cause disorientation, upsetting our feeding, breeding and migration cycles. These sounds could cause us stress, driving some of us from our homes and the rest of us crazy. Didn't your government use unrelenting sound as a weapon to drive Manuel Noriega and David Koresh from their compounds?

"We ocean inhabitants beg you to leave us in peace."

RICH BERNSTEIN

Abandoned nets are death traps for turtles

In early August, I saw an adult green sea turtle tangled in an abandoned lay-net half a mile offshore. The net kept the turtle from breathing. The net was tangled around the turtle's neck so tightly that it probably choked before it drowned. The net was also tangled around its flipper. A big ulua hook was pierced through the back of its flipper like an earring.

These are all the things that my dad and I saw while untangling the turtle. I hope people will stop leaving nets and other dangerous items in the ocean.

MATTHEW KAWIKA ORTIZ
Age 10, Laie

Reprinted from *BioScience*

Saving Endangered Species by Translocation

Are we tinkering with evolution?

Sheila Conant

Establishing populations of an endangered species outside the species' natural range is a technique that offers new hope for saving endangered species. But, like biological pest control (Howarth 1983), such species translocations can eventually have unexpected and undesirable consequences. In our haste to save endangered species, we must make the effort to determine whether a translocated species will disturb the ecology of its new habitat. In addition, we must consider long-term effects of the move on the translocated species itself.

Recent studies conducted in Hawaii of the Laysan finch (*Telespyza cantans;* Figure 1), endemic to Laysan Island, and a rock wallaby (*Petrogale* sp.; Figure 2) on the island of Oahu suggest that translocated populations may diverge very rapidly from parent populations. If this differentiation is genetically based, such translocations may represent human intervention in the evolutionary process, and wildlife managers need to consider this possibility when deciding whether to try translocation to save a threatened species. Recently Scott and Carpenter (1987) called attention to the fact that past attempts at reintroduction or translocation of a species have been poorly documented, leaving managers at a disadvantage in planning new programs.

Sheila Conant is an associate professor in the Department of General Science, University of Hawaii at Manoa, Honolulu 96822.

Translocations can have some unexpected and undesirable consequences

Translocation versus reintroduction

Reintroduction of organisms to their original habitats has long been an accepted goal of management and captive-propagation programs for endangered species. However, it is often unsuccessful because the habitat continues to be plagued by factors that caused endangerment in the first place (Cade 1986, Conway 1983, Lyes and May 1987). The classic example of this problem comes from Hawaii where captive-reared Hawaiian geese or nene *(Nesochen sandvicensis)* have been reintroduced into former habitats on the islands of Maui and Hawaii for over two decades. Reproductive success in the wild has been low, probably due to factors such as predation pressure and inadequate food availability for wild goslings (Stone et al. 1983). Recent proposals to reintroduce animals into parts of their former ranges include California sea otters (*Enhydra lutris nereis,* Anonymous 1986a, 1986b) off the coast of California, red wolves (*Canus rufus,* Anonymous 1986c, Taylor 1986) in the southern United States, and the Przewalski's horse (*Equus przewalski,* Smollar 1986) in Russia.

Translocation may provide an alternative to reintroduction, because organisms can be introduced to habitats free of the problems that caused declines in their natural ranges. Translocation seems especially attractive in archipelagoes where small islands may provide disturbance- or predator-free environments.

In New Zealand, translocation has probably saved from extinction the saddleback *(Philesturnus carunculatus),* a nearly flightless, starlinglike passerine bird (Merton 1975). Although early translocation attempts were unsuccessful, since 1964 populations of both races of this endemic species have been established on a number of New Zealand's small, predator-free islands. Inspired by such success stories, the US Fish and Wildlife Service has attempted translocations of endangered species. In Hawaii, Nihoa finches *(Telespyza ultima)* were unsuccessfully introduced to French Frigate Shoals in 1969 (Amerson 1971), but there is a thriving population of Laysan finches at Pearl and Hermes Reef derived from a 1967 introduction of 59 males and 51 females (Amerson et al. 1974).

In translocation, as in introducing organisms for biological control or aesthetic purposes, desirable effects may not take place, and unpredicted, undesirable effects may be quick to occur and nearly impossible to control. There are two groups of worrisome, unpredictable effects.

Ecosystem damage

The translocated species may harm its new ecosystem. Consider the endan-

gered Nihoa millerbird *(Acrocephalus familiaris kingi)*, endemic to tiny Nihoa in the northwestern Hawaiian Islands. A proposal to introduce it to nearby Necker Island (Sincock and Kridler 1977) failed to consider the potential impact of this insectivorous warbler on the terrestrial arthropod fauna of the island, which contains at least 15 endemic taxa (Conant et al. 1983) and no avian insectivores. The proposal was not implemented, either because the potential for harm was recognized or because it was suggested (Conant 1983) that Necker Island could only support about seven pairs of millerbirds.

In Hawaii biologists need to examine whether translocated Laysan finches on Pearl and Hermes Reef are reducing seabird reproductive success by breaking and eating eggs and whether accidentally introduced rock wallabies on Oahu are overgrazing native plants. There are many examples of organisms introduced for pest control, rather than species maintenance, wreaking havoc on their new environment (Howarth 1983).

Evolutionary change

The other unexpected effect may be rapid changes in the translocated species itself. In an endemic population of one of Darwin's finches (*Geospiza fortis*, Geospizinae) in the Galápagos Islands, Boag and Grant (1981) documented intense selection during a severe drought associated with an El Niño event. Evidence suggested that the changes in bill size that occurred during the two-year selection episode were a result of reduced and variable food availability. Birds with larger bills survived apparently because they were able to crack the hard mericarps of puncture vine *(Tribulus cistoides)*, one of the few foods available during a long drought. Boag and Grant thus pointed to *Tribulus* mericarps as the likely agent of natural selection in this exciting vignette of evolutionary biology.

When provided with a novel environment, translocated populations could be capable of similarly rapid evolutionary change. Differentiation leading to speciation may occur at different rates in different groups, depending on generation time and other factors.

Figure 1. An adult male Laysan finch on North Island of the Pearl and Hermes Reef. Photo: S. Conant.

Laysan finches. Inspired by Boag and Grant's (1981) work, I set out in 1984 to compare the Laysan finch population (Figure 1) introduced to Pearl and Hermes Reef in 1967 with its parent population, which is endemic to Laysan. Laysan Island and Pearl and Hermes Reef are part of the northwestern Hawaiian Islands. Laysan lies approximately 1300 kilometers northwest of Honolulu in the main Hawaiian Islands, and Pearl and Hermes is approximately 400 kilometers northwest of Laysan. Within Pearl and Hermes Reef, North and Southeast Islands are approximately 17 kilometers apart.

These island habitats are isolated and harsh, with limited food, water, and space. The waves in winter storms may wash over the ten-meter high dunes of Laysan, as well as the much lower expanses of Southeast and North Islands at Pearl and Hermes Reef. On Laysan, the indigenous *T. cistoides* is uncommon, probably making up less than five percent of the vegetation cover, while on the four vegetated islets of Pearl and Hermes Reef it is a major constituent of the plant community (Amerson et al. 1974, Lamoureux 1963) and also of finch diets (Conant in press). Laysan finches are omnivorous, but food may be scarce in some winters (Conant 1986). However, there is always a seed bank, of which *Tribulus* mericarps comprise different proportions on the different islands.

In 1984 and 1985, I captured finches on both atolls and recorded body and bill measurements. In addition, I observed feeding behavior and collected and measured *Tribulus* mericarps. Geographic variation in both bill measurements and sizes of *Tribulus* mericarps was significant and has been described in detail elsewhere (Conant in press).

Two-way multiple analysis of vari-

Figure 2. A rock wallaby in Kalihi Valley on Oahu. Photo: Tim Sutterfield.

ance (by sex and island) showed that sex and island both had a significant effect on the measurements ($F = 17.87$, $P < 0.001$), but that there was no interaction effect between sex and island ($F = 1.16$, $P > 0.05$). Analysis of variance (ANOVA) showed that there were significant differences among the islands within each sex for bill dimensions but not tarsus, indicating that variation in bill size and shape is independent of both sex and body size as represented by tarsus (see Conant in press for details).

Using principle components to summarize this variation, I found differences among islands in bill shape. ANOVA of the principle-component scores for bill dimensions reflecting shape revealed significant differences among islands (for males $F = 28.90$, $P < 0.01$; for females $F = 26.82$, $P < 0.01$). Both male ($n = 123$) and female ($n = 90$) Laysan finches on Laysan Island have short, wide beaks; male ($n = 30$) and female ($n = 38$) finches on Southeast Island at Pearl and Hermes, where the original innoculum of 111 finches was released, have long, narrow beaks; and finch beaks (male $n = 32$, female $n = 24$) on North Island at Pearl and Hermes are intermediate between those at Southeast and Laysan. One pair of finches was first observed on North Island of Pearl and Hermes in 1972, five years after the original introduction, and the North Island population may have descended from that single pair of birds.

Analysis of the length, width, and depth of *Tribulus* mericarps from the three islands also revealed significant differences among islands in mericarp size. Laysan mericarps are the largest, almost a third larger than those collected from Southeast Island, and North Island mericarps fall between Southeast and Laysan in size. Thus *Tribulus* mericarp-size variation is consistent with the variation in finch bill shape. On Laysan, 179 feeding behavior observations taken in spring and fall months showed only 4% of finches feeding on *Tribulus* mericarps, while 78% of 213 finches observed during July and August at Pearl and Hermes were feeding on the mericarps (Conant in press). My unpublished observations of mericarp availability indicate that seasonal variation would not explain the magnitude of the differences in feeding behavior.

How can we explain these differences in the beak shape of Laysan finches? Are *Tribulus* mericarps acting as an agent of natural selection? Is the differentiation evolutionary (i.e., the result of founder effect or natural selection) or nonevolutionary (environmentally caused), as James (1983) documented in red-winged blackbirds *(Agelaius phoeniceus)*? In that scientific study nestling blackbirds were exchanged between nests hundreds of miles apart in climatically different locations. James found that a significant proportion of nestling morphological variation was nongenetic and was perhaps environmentally determined.

Research continues on the Laysan finch populations. But the results briefly summarized here indicate that differentiation has occurred and may still be occurring between the translocated and parent populations. Rapid evolution provides an exciting hypothesis.

Rock wallabies. On the steep, southeast-facing slopes of Oahu's Kalihi Valley in Honolulu is a small population of rock wallabies (Figure 2) belonging to the *Petrogale penicillata* species complex (Lazell 1981, Lazell et al. 1982). The wallabies, descended from a single pair that escaped from a private zoo in 1916 (Tomich 1986), may represent one of the few surviving populations of a rare race that still occurs in parts of southeastern Australia (Briscoe et al. 1982). However, the Oahu wallabies appear quite different from all living Australian individuals and museum specimens. Morphological analyses have revealed significant differences in size, coloration, and skeletal characteristics (Lazell 1981). Electrophoretic analysis of tissues from a single Oahu wallaby suggests there may also be genetic differences between the Kalihi population and its Australian relatives.

Lazell (1981) offers some possible explanations for the wallaby variation. The stock from which the wallabies originally came may have become extinct since the Oahu introduction, because no living individuals resemble the Oahu animals. The wallabies may simply have genetically differentiated or evolved sufficiently since their introduction to Hawaii that they should be considered a new species or race. Such differentiation could be due to genetic drift, such that the Kalihi population shows characters that might occur only rarely in *P. penicillatus* in its native habitat. This puzzling situation raises the question of whether the serendipitous translocation of this wallaby to Hawaii has enhanced the likelihood of its survival via the establishment of an alternate population or has instead resulted in the evolution of a new form.

Rethinking translocation

The cases of the Laysan finch and the rock wallaby pose an interesting problem for wildlife managers faced with disappearing species. When we translocate endangered species are we indulging in evolutionary tinkering, taking a chance that we may save something that could eventually become so distinct from the original type that biologists must call it a new race or species?

This question cannot be satisfactorily answered with the scant data at hand. Certainly any translocation program planned today should include, as first steps, the thorough documentation of the source population's morphology, the heritability of morphology, and the molecular genetic variation. This documentation will provide a basis for biologists in the future to assess whether or not

significant differentiation has taken place in populations of translocated species.

Acknowledgments

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Hawaii

It would serve as a kind of "Leading Economic Indicators" for the Island's environment, says Paul Berry.

For most people, measurements of economic phenomena read like road signs in a foreign alphabet. They create a kind of economic shamanism that leaves economists nodding knowingly, while the unanointed simply wonder what all the mumbo-jumbo is about.

Quantities yield patterns, and patterns may suggest what will happen next, so economists combine some of their measurements into what they call Leading Economic Indicators.

Because of the difficulties in measuring it, the quality of life often goes unmeasured and usually doesn't appear in the equations of econo-

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Serious threat
Why we need a more

needs a Paradise Index

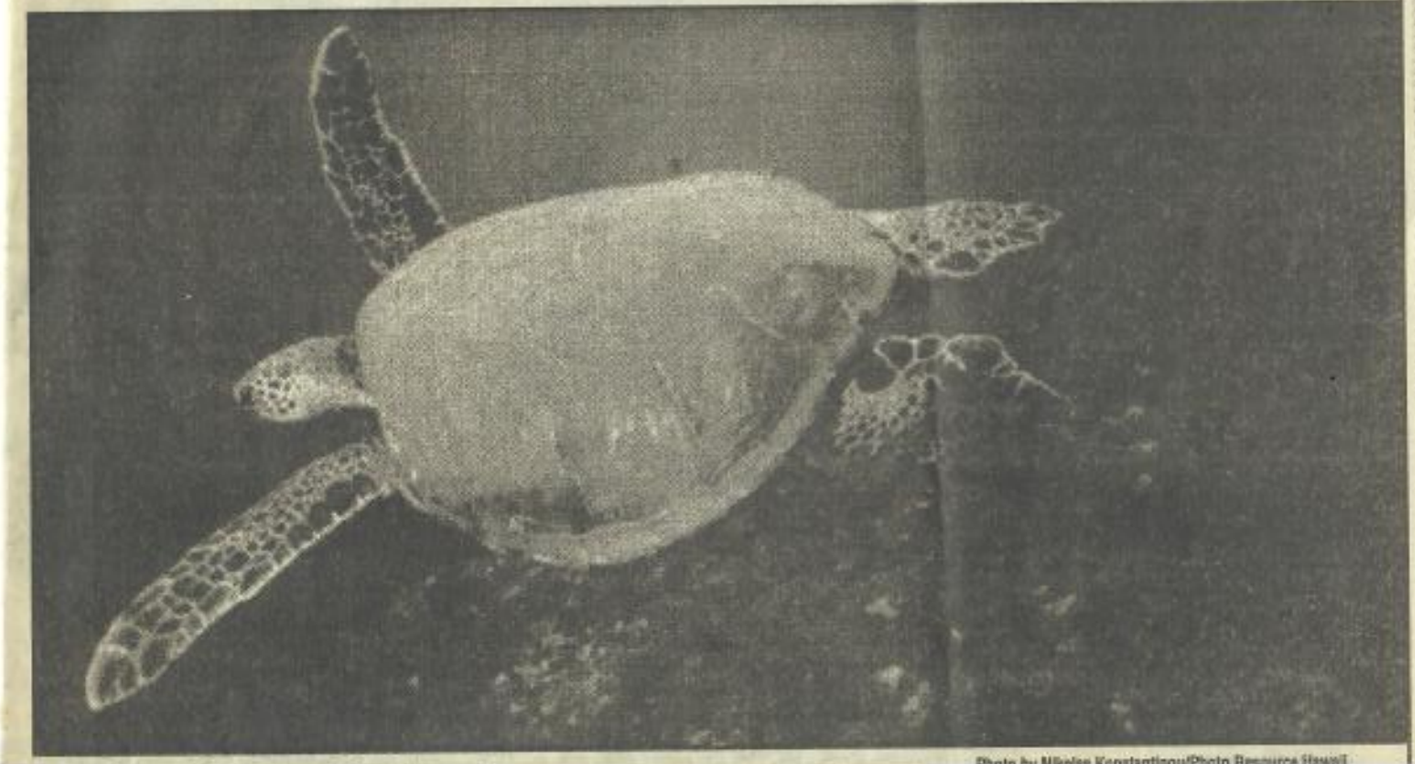

Photo by Nikolas Konstantinou/Photo Resource Hawaii

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Business

mists. Moreover, we hear only anecdotes about damage to nature caused by our economic way of life.

Biological systems keep us alive every bit as much as economic systems, yet when it comes to information about the biological system, other news crowds it out.

Perhaps a deeper reason for our ignorance of nature lies in what we lack. In a world where we seem able to measure and report almost anything, we have no systematic way of measuring what is happening to Island ecosystems, much less any consistent, understandable way to let the public know about them.

So I propose that we close this gap with a new form of measurement. Call it the Paradise Index, for it can provide all of us with a way of knowing if the biological system of the Hawaiian Islands is thriving, what the human presence is doing to it, and what we may expect from nature in the future.

The Paradise Index would serve as a kind of "Leading Economic Indicators" for the environment. It would assign weight to a list of various biological measurements which we know are important, then put them into a single index.

First it would establish a series of critical eco-regions that are needed for the support of the essential resident species of the Islands, including human beings. In these eco-areas, a more limited Native Paradise Index would measure:

- The diversity, health and balance of resident plant life.
- The population, health and balance of resident animal species.
- Water availability and quality.
- New floral and animal pests introduced.
- Habitat available for native

The honu, or green sea turtle, is a threatened species that is now fully protected under federal law.

This article and photograph are taken from "In the Wake of Dreams" by Paul Berry. The book, published by the WhaleSong Collection, includes the best work of 25 of Hawaii's top photographers, represented by Photo Resource Hawaii. The wave photo on the cover, right, is by Dave Bjorn.

plants, and habitat at risk.

- Species at risk or endangered.
- Other indices of the biological system's vigor.

Incorporating information from the Native Paradise Index, the statewide Paradise Index would then measure:

- Water quality in aquifers, streams and at beaches.
- Air quality.
- Energy use per capita.
- Population density and population.
- Visitor traffic.
- Sewage and landfill volume and their quality control.
- Vehicles in the state.
- CO2 and sulfur dioxide emissions.
- Traffic congestion.
- Crop damage from pests and pesticides.
- Topsoil loss.
- Human disease rates/deaths attributed to environmental damage.
- Trash produced per person.
- Rainfall by region.
- Water consumption vs. water availability.

...and so forth.

Such a system would probably require measurement of environmental quality for each island and its offshore waters.

Fortunately we have a number of models to draw on where data from satellite photographs has been combined with data from Earth-bound sources to establish comprehensive data bases of ecosystems and rare species.

The state would first have to determine the cost of such a program, then have to make a commitment to fund Paradise Index measurements.

Once the baseline measurements were in place, we would be able to measure scientifically the gains and losses of environmental quality.

Our environment is the primary asset we offer to visitors, and it is the only nature we have to support residents. In this light, the Paradise Index appears less like an expensive science fiction and more like a necessity that doubles as a good business investment.

By making the Paradise Index a highly publicized matter of public record every two years, we would establish standards of what nature must have to do to sustain its essential systems.

We would also, as a society, make a public statement about what we value in nature.

Such a system would also help us make better long-term economic choices, and it might foster the environmental consciousness we see emerging among our children and some governmental and business leaders.

Finally, the Paradise Index would make these environmental standards a matter of public accountability by area, and in turn make them an issue in every contest for elective public office.

Excerpted from "In the Wake of Dreams" by Paul Berry (WhaleSong, 1993). Berry teaches economics and an environmental course at Punahou School in Honolulu.

Waking the Hanauma turtles a quiet dawn ritual for divers

OUR HONOLULU
Bob Krauss

The People Who Wake the Turtles at Hanauma Bay every Friday morning arrive there as the clouds are ablush with the discovery of dawn.

It's a magic moment between day and night when time stands still, palms trees etched delicately in black against the sky, wavelets washing softly on the beach.

But the stillness is an illusion captured in the mind like a painting because day comes quickly on silent feet as The People Who Wake the Turtles shed their land clothes and slip on face masks and fins.

The People Who Wake the Turtles have traveled all over the world, yet they have found at Hanauma Bay a treasure that draws them back every week.

They are hardly what you would call athletes because they are all in their 70s and they paddle sedately out to wake the turtles. The turtles sleep snugly on the sand in their favorite holes in the coral.

"Turtle, turtle," shouted Roy Gritter over the calm water last Friday. He had wakened three.

"Turtle," shouted Laura Manis and Ruth Ellen Lindenberg. They had wakened two.

The turtles roused themselves and swam lazily with their friends to the reef where they departed the bay for a day of adventure in the deep ocean. In the evening they came back to their nests in the reef.

That morning Laura, a retired professor of sociology, saw two big ulua outside the reef and a three-foot-long yellow trumpet fish.

Roy, a retired chemistry professor and IBM researcher, said he saw about 30 varieties of fish.

Each of The People Who Wake the Turtles has his or her favorite story of underwater adventure at Hanauma Bay.

"The most dramatic thing I've seen is two octopus playing with each other," said Joe Singer, retired engineer, sculptor and print maker. "They were spread out, waving their arms as if they were making sign language."

Arien Grabbe, retired as secretary in a mental health office, remembers getting bitten by male black spotted sergeant fish guarding a nest of eggs. "When they bite you on the thigh, it really smarts," she said.

"You know, it's funny, no matter how many people who come here, you can't spoil it," said Ruth Ellen who heads up the legislative committee of the American Association of Retired Persons in Hawaii. "Hanauma Bay could go on like this forever with reasonable care."

They all agree. Yet Roy said the 30 varieties of fish he saw at Hanauma Friday morning compares poorly to the 80 and 90 he sees at Kaanapali.

"It may be the nicotine in the water from cigarettes that smokers throw on the beach," he said. "At Hanauma Bay, you find far fewer varieties of fish inside the reef than outside."

He said he is also beginning

A3 11/14/93 The Honolulu Advertiser

Advertiser photo by T. Umeda

The People Who Wake the Turtles on the shore of Hanauma Bay.

...at least two of- and cleaning off areas, equipment and

...o see turtles with tumors they ...hink may be caused by chemi...als in the water.

However, The People Who ...Vake the Turtles are optimis...ic about the future of Hanau...a Bay. They credit park man...ger Alan Hong, and support ...f him by the City Council, for ...ctions that have greatly im...roved conditions for fish at the park.

These actions include banning tour buses from the park, closing the park on Wednesday mornings and requiring visitors to feed fish only food sold at the park.

The People Who Wake the Turtles recognize Stephanie Skodak, a 78-year-old who snorkeled all over the world, as their founding spirit. It was she who led them into the water at Hanauma Bay. She died several years ago of cancer. They buried her beyond the reef.

Eight to ten of her disciples continue to wake the turtles every Friday. "We've been rained out only three times since 1985," said Arien.

Hawaii Tribune Herald
11/1/93

Saving the hawksbill turtle

❑ Dedicated folks help endangered species to survive

By Jim Witty
Tribune-Herald

It's not easy being a hawksbill turtle.

From the moment the embryonic juveniles are deposited as eggs inside a snug subterranean nest up the beach, the little critters are vulnerable. Mongoose eat them. Cats eat them. In some countries, people eat them. Unfortunately, when the survivors hatch about 60 days hence, their odds for survival get even longer.

Talk about running the gantlet.

When the figurine-sized turtles finally emerge and push their collective way up through the fluffy black sand and into the night, their harrowing journey is only beginning. Getting from beach to breakers without being gobbled is the first obstacle. Swimming out over the reef without getting swallowed is the next. Buying enough time to eat and grow to adulthood

See HAWKSBILL, Page 10

—T-H photo by William Ing

TURTLE HERDING — Larry Katahira, Resource Management Specialist with Hawaii Volcanoes National Park, helps a few newly-hatched hawksbill turtles find their way back to the sea.

cc: WRO
PAAR
Division Chiefs From: Supt HAVO

Hawaii Tribune
11/1/93

HAWKSBILL: Isle turtles have tough lives

From Page 1

in the open ocean without being caught by some pelagic predator is yet another.

All of which is dramatic, perhaps heart rending, but entirely consistent with the natural scheme; the food chain is a rough neighborhood. The top link, however, has turned the turtle's environment into an unnatural killing field (the natural scheme ain't so natural anymore).

Ironically, it's the top link that's fighting to save the hawksbill from extinction.

In the dim past, the hawksbill turtle — known as 'ea in Hawaii and Eretmochelys imbricata in scientific circles (not to be confused with the more common honu or green sea turtle) — didn't have to deal with introduced animal pests, cross nets, tour buses or humans who convert its highly-valued carapace into tortoise shell finery.

These are not good times for hawksbill turtles. But they could be worse. They do have the Endangered Species Act to protect them from human depredation. And they have Larry Katahira and a cadre of bright-eyed volunteers doing their best to hold the turtles back from the calloused jaws of entropy.

Katahira, Resource Management Specialist with Hawaii Volcanoes National Park, oversees a program that deploys 10 volunteers at strategic isolated beaches up and down the rugged black-sand-and-bluff southeast coastline of the Big Island. Camping in primitive conditions for weeks on end, they monitor the turtles' nesting, the seemingly endless incubation period and the triumphant emergence in the dark of night. It's the latter — those precious few hours when legions of baby turtles are sent scooting slowly seaward — when Katahira and crew really earn their keep.

Scientific detachment be damned. They rescue baby hawksbills caught in the cobbles. They turn them when they become disoriented. They intervene.

"It's manipulation," acknowledged Katahira. "But these endangered species have been manipulated on the wrong end. We want to tip the scale."

One recent evening, Katahira and volunteers Mary Farrington and John Klavitter were excavating a week-old nesting site at Kamehame, looking for shell fragments and dead hatchlings, when they found the real thing — 11 juvenile turtles. Weak and dessicated, but alive. When it became apparent they were too weak to make the long trek from nest to shore, Katahira and the others helped them along. When the surf sent them tumbling back up the beach, they helped them past that too.

"We can say that in the Hawaiian Islands, the hawksbill is so rare, there are not more than 19 nesting in the islands that we know of," said Katahira. " ... It's sad to see a species go extinct. I think there are missing components in Hawaii, the o'o, the o'u. I'd hate to see the hawksbill go extinct. One more missing component ... The goal is to place them back in places where they nested historically. It's going to take a lot of effort. Once you bring them back, you have to educate the people."

The plight of the hawksbill is most evident at Punalu'u where the nesting habits of the milleniums collide with busloads of tourists and the changing contour of the beach. One turtle defied all odds one recent season and nested under the hard-packed roadway where her forebears had obviously hatched in the past, said Katahira. That year, he ringed the nest with a fence to keep it from being rolled over or trampled.

Once out of the nest at Punalu'u, the turtles are often confused by the lights of the parking lot, leaving it to local residents to rescue them.

arden Isla
The Garden Island TH 30 Sept. 1993
Ni'ihau since 1902 Home Delivery Price 25¢

A LARGE GREEN SEA turtle, which had become entangled in a floating net, is free today, thanks to some good Samaritans.

RICHARD KOERTE and Ralph Young hang on to the turtle as they work to free it.

Operation green sea turtle

A large green sea turtle is alive and well today, thanks to the joint efforts of state aquatics officials and concerned citizens.

State aquatic biologist Don Heacock said he received a call on Tuesday that a large turtle was entangled in a large net floating in the ocean near Pali Ke Kua in Princeville.

Kevin Sadel, working on the Pali Ke Kua project, was the good Samaritan who took the time to call about the entangled turtle.

"The public are our eyes and ears," said Heacock. "Half the time, we wouldn't know about emergencies such as this if without a call."

Heacock estimated that the turtle's carapace was approximately 37 inches long and the animal weighed almost 300 pounds.

"It was a very healthy turtle, with no tumors," he said, noting that the trapped turtle was easy prey for sharks and would never have been able to get out of the net by itself.

Heacock and Richard Koerte were offered the services of north

(See Turtle on Page 2)

Turtle

(Continued from Page 1)

shore boater Ralph Young, who transported them to the turtle's location. Heacock said the turtle was so large, "I would still be out there if I had to do this by myself." The turtle was tagged with National Marine Fisheries Service tags and cut free.

Heacock said the incident illustrates the seriousness of the problem of marine debris, which is the target of a national cleanup program called "Get the Drift and Bag It."

He asked anyone who runs across large netting floating in the water or washed up on shore to try to drag it up as high as possible out of the tidal zone. "Tie it to a tree if need be," he suggested.

Crushed turtle was a rare hawksbill

THE MAUI NEWS 5 SEPT 93

By STEVEN TAMAYA
Staff Writer

HONOLULU — A huge sea turtle killed when a vehicle ran over it in Kihei last weekend belonged to the extremely rare and endangered hawksbill species, authorities said.

Photographs of the turtle were used to make the positive identification, said George Balazs, a zoologist with the National Marine Fisheries Service in Honolulu.

The turtle was found crushed on Aug. 27 on North Kihei Road. It appears the turtle was searching for a nesting site.

"They're very, very rare in the Hawaiian Islands and very, very endangered under the (U.S.) Endangered Species Act," said Balazs, leader of the federal agency's marine turtle research program.

Balazs said he is now concerned for the safety of a second sea turtle, probably also from the hawksbill species, that was seen nesting in the same area two nights after the first turtle's death.

"This is a terrible tragedy. It would even be worse if it happened a second time," he said.

Balazs said the only advice he can

See CRUSHED
on the last page of this section

Maui News - Page 1
9-5-93

Crushed turtle a rare, endangered hawksbill

Continued from Page A1

offer is for motorists in the Kihei area to slow down if they see a turtle until the nesting season runs its course through November.

"We can't put up a fence alongside the road," conceded Balazs, referring to how close the beach runs adjacent to North Kihei Road.

People who spotted the turtle killed last week on the road apparently tried to save it by calling police. Witnesses said it looked like it weighed 400 pounds.

But the turtle was struck and killed before help arrived. Balazs said at the time he thought it was a hawksbill turtle because one had been reported nesting in the same area in 1991.

A definite identification was made by studying the shape of the dead turtle's beak and head in photographs, Balazs said.

There are probably no more than two dozen hawksbill turtles in Hawaii, according to Balazs, who said last week's death was particularly tragic because a mature adult female turtle is so vital to perpetuating the species.

More than 170 eggs were recovered at the accident scene. Balazs said the eggs have been buried in a safe, undisclosed location and could hatch if conditions are right.

"She was worth literally thousands of hatchlings in her lifetime," he said of the turtle that was killed.

The National Marine Fisheries Service considers the hawksbill turtle one of the most endangered of all marine turtles because of how tortoise shell is coveted in Japan.

A recent U.S. Interior Department study found that Japan imported more than 18,000 hawksbill shells as recently as three years ago. Japanese craftsmen use tortoise shell in jewelry, eyeglass frames and other products.

Underwater USA (1993) Vol. 10 Number 4

Snorkeling With Hawaiian Turtles

By Cat And Kevin Sweeney

Cat And Kevin Sweeney Photo

Calm, Hawaiian waters are perfect for a snorkel sea-fari with the green sea turtle.

Remember how loud the bubbles sounded when you first began scuba diving? How each inhale echoed as if you were sucking all air out of an empty warehouse? And how at ease you felt when your instructor came close and you could hear his breathing was just as loud as yours? Well guess what? No one has turned down the volume, you have just gotten used to noise. Unfortunately most marine animals have not, and believe me they can hear you coming from a long way off.

The silent approach of a snorkeler can put the diver in a much better situation to really study the marine life. Positioning your body just above an interesting marine creature in shallow water can reward a diver in a close examination of their natural behavior. With a diver suspended above the reef, most fish go about their daily habits undisturbed. And without the bulk of scuba equipment you are more streamlined, so you can keep up with a fast moving animal.

There are some fantastic snorkeling sites which offer divers a closer look at special marine animals which are just not suitable for scuba. One of these magical bays is Kahalu'u (Kah hah loo) beach on the Big Island of Hawaii. It is home to a large group of green sea turtles, that share the clear warm waters with dozens of snorkelers on any given day of the year. They are quite docile, which allows for some of the closest encounters with these elusive creatures I have ever experienced.

The bay is protected by a breakwater, creating a perfect environment for snorkelers of all ages and abilities. The water is shallow, about four to six feet deep at the southern end and just over eight feet deep in the middle and north section. The visibility is great and it is teeming with reef fish— and some 20 resident green sea turtles, saltwater reptiles with streamlined bodies that average 36 inches in length, but can reach five feet and weigh up to 400 pounds. Their heart-shaped carapace (upper shells) are splashed with amber, olive-green and gold. The name "green" sea turtle is actually derived from the color of its body fat. Mature males and females are easily distinguished by their tails. The males have impressive long stout tails extending past the hind flippers while the females are short and stubby. To reach maturity may take up to 50 years, average is half that.

When swimming along side these curious animals, divers are amazed by the grace they exhibit in the water, and their speed. Their long flippers can easily put a lot distance between them and an unwanted visitor.

But like most animals, if you maintain an even or slower pace, snorkeling alongside, they seem to enjoy the company. Sea turtles are air breathers. When resting, they stay underwater for hours.

Pacific green sea turtles are protected under the federal Endangered Species Act of 1973 and Hawaiian State Law. They are listed as threatened, and should never be touched, held, ridden, pursued, or otherwise harassed. The National Marine Fisheries Service estimates 750 green sea turtles live in Hawaiian waters.

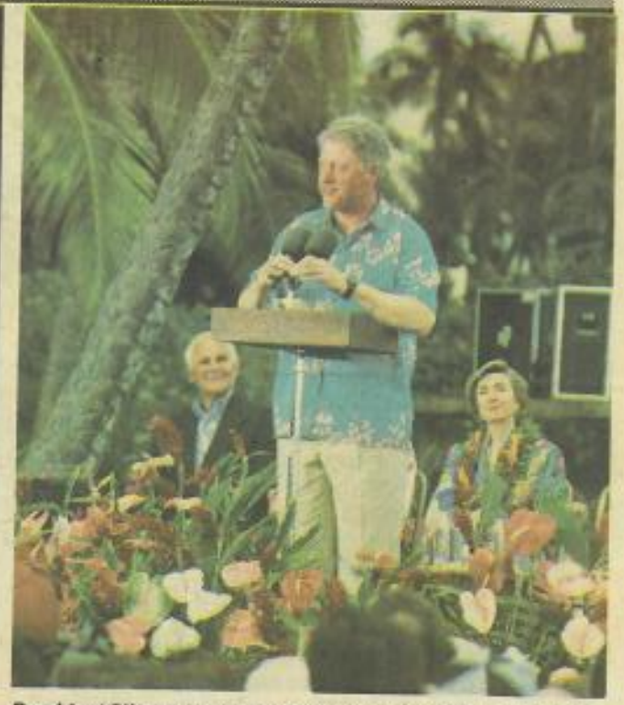
Here is a place to marvel at the wonder of the undersea life, all you need is a mask and snorkel.

AUG 93

Sovereignty and Native Hawaiian Fishing Rights

by Sylvia Spalding

Hui Na'auao panelists Edward Ka'anana, Thomas Friel, Alan Murakami, Walter Paulo, Lehua Napoleon and Ululani Beirne.



President Clinton's speech addressed native Hawaiian issues.

■ In his July 11th speech on the beach, **President Clinton** acknowledged the 100th year commemoration of the overthrow of the Hawaiian monarchy and the concerns of native Hawaiians. He said he would work "to address these concerns in a positive way."

When a group of Hawaiians chanted "Justice for Hawaiians," Clinton replied, "I hope we can provide it."

Justice for Hawaiians is an issue with many forms. One form includes native rights to natural resources. Publicity has been generated about native rights to land—Hawaiian Homelands, ceded lands, Bishop

The Kingdom of Hawai'i was overthrown in 1893 and "annexed" by the United States in 1898. In 1900, Congress passed Hawai'i's Organic Act, which established the territorial government. Section 95 of the act repealed the exclusive fishing rights except for those that had been "vested." Section 96 stated that vested fishing rights are those that are registered within two years and that vested rights could be condemned with "just compensation."

As intended, the requirements of the Act destroyed the system of private fisheries. By 1900, these fisheries had dwindled from between 1,200 to 1,500 down to 300 to 400. Four decades later, only

management of the **Western Pacific Regional Fishery Management Council (WESPAC)**. In developing its limited entry proposal for the Northwestern Hawaiian Islands (NWHI) bottomfish fishery, the Council was asked to consider preferential treatment to Native Hawaiians based on "historical fishing practices."

The federal government may also need to consider native Hawaiian rights to revenues derived from marine resources taken from the EEZ surrounding Hawai'i.

Estate lands, etc. But less has been said about native Hawaiian rights to fishing and marine resources.

Hui Na'auao, a sovereignty and self-determination coalition of native Hawaiian groups, brought this seldom publicized issue to the forefront during a two-hour panel discussion at the University of Hawaii-Manoa campus on June 29. Speakers from Kahana valley, O'ahu, to Miloli'i, Hawai'i, shared their knowledge and experiences during this emotionally moving and thought-provoking evening.

The Legal Argument

Alan Murakami, an attorney with the Native Hawaiian Legal Corporation, discussed the historical and legal basis of native Hawaiian rights to fishing and marine resources. The information is also found in the Native Hawaiian Rights Handbook, published by the corporation.

Unlike the United States of America, the Kingdom of Hawai'i recognized exclusive nearshore fishing and marine resource rights. These rights traditionally belonged to the *konohiki* (lesser chief, or land agent) of an *ahupua'a* (a self-sustaining land district) as well as to the tenants of the *ahupua'a*. These rights gave the *konohiki* and *ahupua'a* tenants exclusive use of the reefs and nearshore waters abutting their *ahupua'a*.

In addition, the *konohiki* had the right to manage the fishery, for example, by placing a *kapu* on certain fish and fishing seasons, and by taxing the fish.

Under this ancient system, open-ocean water could be used by all, except when restricted by the *ali'i* (king) or during religious practices.

These ancient rights were acknowledged in the Law of Kamehameha III on June 7, 1839. In 1842, section 8, chapter III, was added to the proclamation, a part of which states the following:

"These are the fishing grounds which His Majesty the King takes and gives to the people; the fishing grounds without the coral reef, viz. the Kilohee grounds, the Luhee ground, the Malolo ground, together with the ocean beyond.

"But the fishing grounds from the coral reef to the sea beach are for the landlords, and for the tenants of their several lands, but not for others."

101 private fisheries were established and registered by some 35 owners. The federal and territorial governments had condemned or acquired 37 fisheries. The remaining fisheries had not been registered and were lost.

Because the private fisheries passed to the *konohiki* or were lost when the *konohiki* failed to register within the required two years, there are questions today about the lack of compensation given to *ahupua'a* tenants.

There are also questions about the justness of the compensation given for condemned fisheries, such as the Ho'ae'ae and Apoka'a fisheries at Pearl Harbor (the combined determined value in 1930 set at $5,833 by the U.S. District Court) and 14 fisheries in Pearl Harbor condemned by the U.S. Navy in 1934.

Also of concern is native Hawaiian rights to the fisheries and marine resources of the open-ocean waters. Historically, Hawaiians have used deep-sea fishing grounds, or *ko'a*, found in waters up to 300 fathoms deep. The customary rights to these fisheries were noted in the 1839 Law of King Kamehameha III.

Today, these native Hawaiian rights conflict with the **Magnuson Fishery Conservation and Management Act**, passed by Congress in 1976. The act gives the federal government exclusive management rights in "a zone contiguous to the territorial sea extending out to a line 200 nautical miles from shore." (Note: the federal government and the state of Hawai'i disagree on the definition of "territorial sea." Congress determines it to be 3 miles from shore; the state legislature, as recently as 1990, has requested that it be recognized as 12 miles from shore.)

Native Hawaiian rights also conflict with President Reagan's 1983 proclamation that gives the United States sole jurisdiction to the 200-mile Exclusive Economic Zone (EEZ), including "sovereign rights for the purpose of exploring, exploiting, conserving and managing natural resources, both living and nonliving, of the seabed and subsoil and superadjacent waters."

The EEZ around Hawai'i encompasses 695,000 square nautical miles and is currently under the

Marine Resource Management and the Need for Self-Determination

Thomas Friel, the only native Hawaiian special agent in the National Marine Fisheries Service (NMFS), which enforces federal marine laws, was both reluctant and compelled to participate in the panel discussion. After giving an overview of Hawai'i's current fishery, he said "The simple solution to this [is] self-determination [to] control government and big business."

WESPAC's regulations have been too little, too late, and have allowed non-native Hawaiians to exploit the fishery.

Unlike subsistence fishermen, commercial fishermen operate on "greed" and are not concerned about replenishment. Longline fishing boats measuring 50 to 60 feet and utilizing technology that allows them to haul 100 tuna and billfish in one night necessitates limited entry and a fishing season.

In the NWHI, the fishermen include mainland Caucasians, Vietnamese, Koreans and non-Hawai'i residents who offer "no plus to the economy locally." Native Hawaiian fishermen are economically restricted from the fishery due to the hundreds of thousands of dollars that the fishery necessitates.

Native Hawaiians, unlike Native American Indians, do not enjoy native fishing rights. Because of this, sea turtles (which have been on the endangered species list) can not be eaten by native Hawaiians as they have traditionally. On the positive side, the sea turtles are on the rise again.

Also on the rise are the Hawaiian monk seal and *nai'a* (porpoise) populations. The latter are currently a problem for fishermen. But this is because the normal food stocks for the *nai'a* have been overfished.

continued on page 13...

Hawaiian Fishing Rights continued...

Native Hawaiian Fishponds

Ululani Beirne, the state representative for the 46th district (He'eia to Kahana), shared her views on the restoration, ownership and use of ancient Hawaiian fishponds.

The permitting process for fishpond restoration is an incomprehensible hardship for native Hawaiian residents who wish to restore ponds in their area. For example, Kahana valley residents wishing to restore the Kualoa fishpond wall, which was wiped out by the 1946 tidal wave, have been stymied by the permitting process, which requires a Conservation District Use Permit, an Army Corp of Engineer Permit and an Environmental Assessment Permit among others.

The sad fact is native Hawaiians no longer have jurisdiction over nor ownership of most of their ancestral fishponds. For example, on Moloka'i, the state has selected 38 out of 69 candidate fishponds to be included in a master-plan restoration permit. Of these 38 fishponds, 16 are owned by the state, one is owned by Hawaiian Home Lands and 21 are owned privately.

Native Hawaiians remember the old days of the *hukilau*, when residents of an area were always given a share of the catch taken from nearby waters. Nowadays the *hukilau* is just show-and-tell for the tourists.

Traditional Values– Keepers of the Land

Edward Ka'anana and Walter Paulo flew of Miloli'i (Hawai'i's last fishing village) worked with NMFS during the 1950s and are currently involved with the 'Opelu Project in Wai'anae. Edward is particularly interested in reviving the ahupua'a concept in the community. Walter, who has been a fisherman since he was 9 years old, worked on a longliner in Hilo and the Japanese fishing fleet in Honolulu before being employed by NMFS. Afterward, while working for the United Nations and living in Western Samoa, he realized the significance of the native Hawaiians loss of their 'aina (land). When he returned to Hawai'i, he took a stand at Sand Island.

"It is not ours to buy and sell the land. We are only

the keepers of the land." That was the message taught by the elders and the traditional view of man's relationship with the land and the sea.

Accordingly, fishermen not only caught fish but also spent time to feed the fish and to offer fish to the *kahuna* (priest).

Also, when they fished, they took only what they needed and would leave the rest. For example, if they found three lobsters in an area, they took one and left two, or, if there were seven, they took three or four but would leave the rest "because [those fish] are the keepers of the house." Today, diving grounds are depleted and the fish houses are busted up. The attitude today is "if we don't take the fish, the next guy will."

In the olden days, one fishing village could not intrude on another fishing village. But today the rule is anyone can fish anywhere they feel like. For instance, today fishermen from Kailua and Napo'opo'o compete with the Miloli'i fishermen who are fishing the Miloli'i ko'a. And these "intruders" don't realize or don't respect the kapu, established in the 1920s, against using fish or meat bait in Miloli'i waters.

In the olden days, when the 'opelu appeared around June, fishermen from four or five *'ohana* (family groups) would spend about 1 1/2 months to *hanai* (feed) the *ko'a* a variety of foods, such as *kalo* (cooked taro) and pumpkin, about two or three times a week. Then, in July or August, they would have a *pa'ina* (small party with dinner) and begin harvesting the fish. But the fish were not for intruders.

During the 'opelu season, which lasted until around February, taking aku was *kapu* and punishable by death. When the 'opelu season ended, the aku season began and the taking of 'opelu was *kapu*.

Conclusion

Following the presentations, the audience and the panelists engaged in a question-and-answer period during which the spiritual and social aspects of traditional fishing became apparent. Lehua Napoleon, community developer for Hui Na'auao, ended the discussion by recommending that sovereignty include a return to traditional fishing methods and kapu in order to preserve Hawai'i's natural resources for generations to come. . . . **Sylvia**

6/19/93 B6 THE HONOLULU ADVERTISER

Rare turtle, tangled in net, washes ashore

By Jan TenBruggencate
Advertiser Kauai Bureau

LIHUE, Kauai — A small, skinny Pacific hawksbill turtle washed up on Wailua Beach Thursday, trapped in a mess of nets.

There was no indication how long the animal had been stuck in the netting, but it was clear it had not eaten in a long time, said Don Heacock, state aquatic biologist for Kauai.

The emaciated turtle, on the federal endangered species list, was rescued and carried first-class on Aloha Airlines to Oahu, where it was taken to a National Marine Fisheries Service sea turtle recovery tank at Kewalo Basin. It was reported in improving condition.

Heacock said Peggy McKenna and Pam Holland were walking along Wailua beach fronting the county's Wailua Golf Course, and noticed the turtle. They disentangled the animal, and found it very weak. A lifeguard suggested they release it into the enclosed salt water pool fronting Lydgate Park until someone could be reached to care for it.

Heacock got the call, and found the turtle in the pond, having difficulty swimming. It was 10 inches long and weighed about three pounds, he said. He caught it by hand, and shipped it immediately to Oahu for care.

The Pacific hawksbill, known in Hawaiian as honu 'ea, is rarer than the Hawaiian green sea turtle. Heacock said they are seldom seen at the size of the Wailua turtle, since they remain far out at sea during their early years. They grow to have a shell length of 32 inches, and can weigh 75 to 150 pounds.

"This points up the hazards of marine debris, and this is just the tip of the iceberg. How many species are caught and never wash up on shore?" Heacock said.

TURTLES: Rare species making slow comeback

Continued from Page A-1

Despite their rarity, hawksbills are well known indirectly. They are the source of "tortoise shell" jewelry. Killing the turtles or importing jewelry is banned by the U.S. Endangered Species Act. Violators are subject to a year in prison and $20,000 in fines.

The turtles are worthless for their meat, which tastes bad and can even be poisonous.

The national park began paying more attention to protecting the turtles about four years ago, Katahira said. Thousands were being killed in the Philippines and exported to Japan for jewelry.

In Florida, the only other place in the United States where the hawksbills nest, they haven't been seen for several years.

So the recent discovery of new nests at a remote beach in the park was good news.

But the beach is bad because of a rocky barrier between the water and the sand. Mother turtles can climb over the rocks, but hatchlings trying to get to the sea get hung up in the rocks, dry out in the sun, and die.

Park personnel have to be there during the nighttime hatchings to help them into the water.

Camp fires and flashlights disorient the turtles, Katahira said. At Halape, where the last turtle was seen in 1989, a female apparently went off course because of a camp fire, fell into a crack, and died. She had 300 eggs inside her.

At the popular swimming beach at Punaluu, south of the park, a roadway is regularly graded on top of the sandy beach. Turtles have tried to scratch nests in the road. Katahira is going to suggest that the community allow the natural buildup of soft sand to cover the road.

At nearby Kamehame, as at other sites, mongooses are a threat to turtle eggs.

"They just dig them up and have a big luau," Katahira said.

Kamehame is also inside the proposed Palima Point rocket launch area. The park has opposed the launch site since 1988.

By Rod Thompson, Star-Bulletin

Ben Saluda, environmental education coordinator at Hawaii Volcanoes National Park, shows illegal products made from hawksbill turtle shell.

Green sea turtles have chips on their shoulders

☐ Ten of the rare creatures will be liberated on July 4

By Rod Thompson
Big Island correspondent

KOHALA COAST, Hawaii — While hawksbill turtles are so rare they're seldom seen, Hawaiian green sea turtles, their more common cousins, are going high-tech.

About 10 of the green turtles will be released on the beach at Mauna Lani Resort on the Fourth of July — the resort calls it Turtle Independence Day — and all of them will be carrying computer identification chips under their skin.

The chips are so small that they are put into the turtles with hypodermic needles, according to the resort. The chips have no power supply of their own but respond when a hand-held detector is passed over the animals.

Hawaiian green sea turtles are classified as threatened, not as rare as the endangered hawksbill turtles but still rare enough to be protected by the U.S. Endangered Species Act.

That protection makes it illegal to have them in captivity, but Sea Life Park is exempt because it had them before the law was passed.

The park lets most of its new hatchlings free into the sea every year, but most of them get eaten by birds and fish. The park keeps a few until they're about 2 feet long and better able to handle the open ocean.

Unlike the hawksbills, which nest in various places on the main Hawaiian Islands, the green turtles nest mostly in the leeward islands, especially French Frigate Shoals, said George Balazs, the National Marine Fisheries official who put the chips in the turtles.

If green turtles hatched on Oahu are released at the Big Island, where will they nest? No one knows, but the chips will help researchers keep track when the turtles reach sexual maturity, 20 to 25 years from now, he said.

Hawksbill turtles make comeback in Hawaii waters

☐ The threatened species takes years to reproduce

By Rod Thompson
Big Island correspondent

Honolulu Star-Bulletin A1 7-1-93

HILO — Hawksbill turtles have begun returning to the beaches of Hawaii Volcanoes National Park for their annual nesting season.

But don't run right over to take a look.

People are bad news for nesting turtles and there are awfully few hawksbills to begin with.

"They're one of the most endangered marine turtles in the world," said park resource specialist Larry Katahira.

Not more than 12 per year nest in Hawaii, at five nesting sites on the Big Island and one on Molokai.

Because a female nests only every second or third year, the 12 or so seen in one year may mean a total of no more than 24 females in Hawaiian waters, Katahira said.

See **TURTLES**, Page A-6

Hawksbill turtle

Endangered species

- **Numbers:** About 12 nest in Hawaii, most at Hawaii Volcanoes National Park. Four other sites on the Big Island. A few nests also are found on Molokai.
- **Elsewhere:** Only other U.S. nesting site is in Florida, but they haven't been spotted there for years.
- **Warning:** Avoid nesting areas, particularly at night. Also, lights disorient the turtles.

Inside

- Hawaiian green sea turtles will be carrying computer identification chips under their skin. **Page A-6**

Star-Bulletin

The Garden Island
Kauai
5/1 - 5/6 '92

Dead turtles found in Hanama'ulu Bay

By GEORGIA MOSSMAN
Staff Writer

HANAMA'ULU—Five young, healthy-appearing sea turtles have been found dead in and around Hanama'ulu Bay, all in a 10-day period, and the deaths of these members of a protected species are cause for concern for authorities involved in protecting them.

Four Green Sea turtles and one Hawksbill turtle were found dead April 19, 21, 27 and 30th. Three of them washed up on the shore and two were found floating in the ocean off Ahukini Pier, according to Department of Health Environmental Health Specialist Carl Berg.

He said he and Don Heacock, Department of Land and Natural Resources' Aquatic Resources Manager, who have been working together to try to solve the mystery surrounding these deaths, are "extremely concerned that there have been so many turtles die, in so short a period of time, all in one area.

"Both of these turtles are protected under state law and the Hawksbill is an endangered species protected by federal law, so these deaths are really distressing," Berg said.

Three of the turtles were immediately sent to the U.S. Fish & Wildlife laboratory on O'ahu but the cause of death couldn't be determined in the preliminary autopsy. The other two turtles were frozen and they'll be sent to the lab for more tests.

He said he and Heacock feel the possible causes of death were that the turtles got caught in fish nets and drowned, or there is something in the contaminated waters in that area that killed them.

They are asking anyone who knows of any netting in that area in the past few weeks, to call them at 241-3323 or 241-3400. They would like to be able to confirm or rule out this possibility.

Berg said Hanama'ulu Bay has been posted as polluted waters for the past six months because of a very high bacterial count. That doesn't mean it's a health hazard for humans, "so there's need to panic." But it's possible that the turtles are susceptible to certain bacteria that may not affect other animals or fish, and that could be the cause of a bacterial or viral infection.

He said they're gearing up to do bacterial tests on them and the federal government is working on them on this.

If there's follow-through on the recommendation that Hanarna'ulu River be cleared so the water passing through it can be flushed, that would help reduce the problems with bacteria in the bay, Berg said.

At a glance

- Environmental officials are concerned about the deaths of five young turtles, who were found in Hanama'ulu Bay over the last two weeks.

Female sea turtle traced 600 miles

By Edwin Tanji
Advertiser Maui County Bureau

KAHULUI, Maui — A green sea turtle that was mutilated by sharks and dragged to shore near Kahului Harbor early this month was a tagged female seen laying eggs in the French Frigate Shoals more than 600 miles away in 1990.

George Balazs, head of marine turtle research for the U.S. Fish & Wildlife Service, said he helped to tag the turtle in 1985 in its feeding grounds off Kahului.

It was among a number of green sea turtles that have been tracked from feeding areas around Hawaii to breeding grounds in the distant northwest islands, he said.

The turtle, which had a rear flipper and two front flippers torn off by sharks could not be saved, Balazs said. It was a large and otherwise healthy female weighing 250 pounds, he said.

In fact, he said, an examination of the animal found about 700 eggs in its abdomen, indicating the turtle was probably heading back to French Frigate Shoals to lay.

"Had it not been for the amputations that occurred, this turtle should have been migrating back to the French Frigate Shoals to lay another clutch," he said.

Balazs could not explain the migratory pattern in which turtles travel hundreds of miles to feed in one area and breed in another. Neither could he explain how the animals navigate the hundreds of miles of open ocean.

He cited a project in which three turtles in the French Frigate Shoals were fitted with transmitting devices that could be tracked by satellite. One was tracked to Johnston Atoll, a bare speck in the ocean 500 miles south of French Frigate Shoals.

Two others were tracked by satellite to Kaneohe Bay far to the southeast, Balazs said.

One finding of the satellite tracking project was that the turtles headed south from French Frigate Shoals and then headed across to Oahu, he said.

"We thought they might have been island hopping, going from one island in the chain to the next in moving back to their feeding grounds," he said. "But we found they went way down south in the wide open ocean where they couldn't possibly see any of the peaks of the high islands to navigate."

Balazs said turtles regularly feed around the main Hawaiian Islands and seem to prefer specific feeding grounds.

In Kahului Bay, he said, the turtles' favored food is a red seaweed, *Pterocladia capillacea*, which grows on rocks in nearshore waters.

But the green sea turtles do not appear to lay their eggs around the main islands, he said. When there have been reports of green sea turtles coming ashore, he said, they have almost always been turtles suffering from tumors who appear to beach themselves on purpose to rest.

The one confirmed case of a turtle laying eggs on a beach on Maui involved a hawksbill turtle, he said.

The fibropapillomas tumors that force some turtles to rest on the beach appear to also affect the turtle's ability to navigate, Balazs said. One of the turtles fitted for satellite tracking had tumors, he said.

That turtle followed an erratic path back to Kaneohe, indicating the tumors may have affected its directional senses, he said.

He also noted that there are few severe cases of tumors among the breeding population at French Frigate Shoals. That might indicate diseased turtles have difficulty migrating the 1,200-mile round trip, he said.

Star-Bulletin
Friday, May 21, 1993 □ A-5

IN BRIEF A6 5/22/93 Honolulu Advertiser

10-year prison sentence in Maui baby's death

WAILUKU, Maui — A Wailuku woman yesterday was sentenced to 10 years in prison for the 1991 death of an infant who was in her care.

In imposing the sentence on Lynn Keliihoomalu, Circuit Judge E. John McConnell said the child's death was an "unspeakable tragedy." Under state law, she must serve a minimum of three years and four months before she is eligible for parole.

Keliihoomalu, 35, pleaded no contest in February to the April 16, 1991, death of Thomas Fennell. An autopsy determined the 7½-month-old infant died from a brain hemorrhage that was a result of severe shaking.

Permits for campers

Camping permits for the Kamehameha Day holiday weekend June 11 through 13 will be issued beginning at 7:45 a.m. Friday at the Department of Parks and Recreation permit office in the city Municipal Building.

The permits will be issued on a first-come, first-serve basis.

Each applicant must be at least 18 years old and only one camping permit is allowed per applicant, with a maximum of 10 campers per permit, including children.

Camping permits will not be issued to organized groups of more than 10 people.

Gill net restrictions

The time limit that gill nets may be left unattended has been changed to two hours and any gill net in the water cannot be left for more than four hours in a 24-hour period, the state Department of Land and Natural Resources has announced.

Any person fishing with a gill net may not leave the net unattended for more than two hours without visually inspecting the net and releasing or removing undersized, illegal or unwanted fish.

These restrictions, signed into law by Gov. Waihee, take effect immediately.

The minimum stretch mesh size for gill nets is still 2 inches.

The restrictions were designed to enhance near-shore fish populations by reducing the number of undersized, out-of-season or unwanted fishes that are inadvertently caught in gill nets.

For more information, call the nearest office of the DLNR's Division of Aquatic Resources at 587-0100 in Honolulu; 933-4501 in Hilo; 241-3400 in Lihue, Kauai; or 244-2072 in Wailuku, Maui.

Gill-net fishing signed into law

Here is a list of bills Gov. John Waihee recently signed into law (all became effective May 7 unless noted):

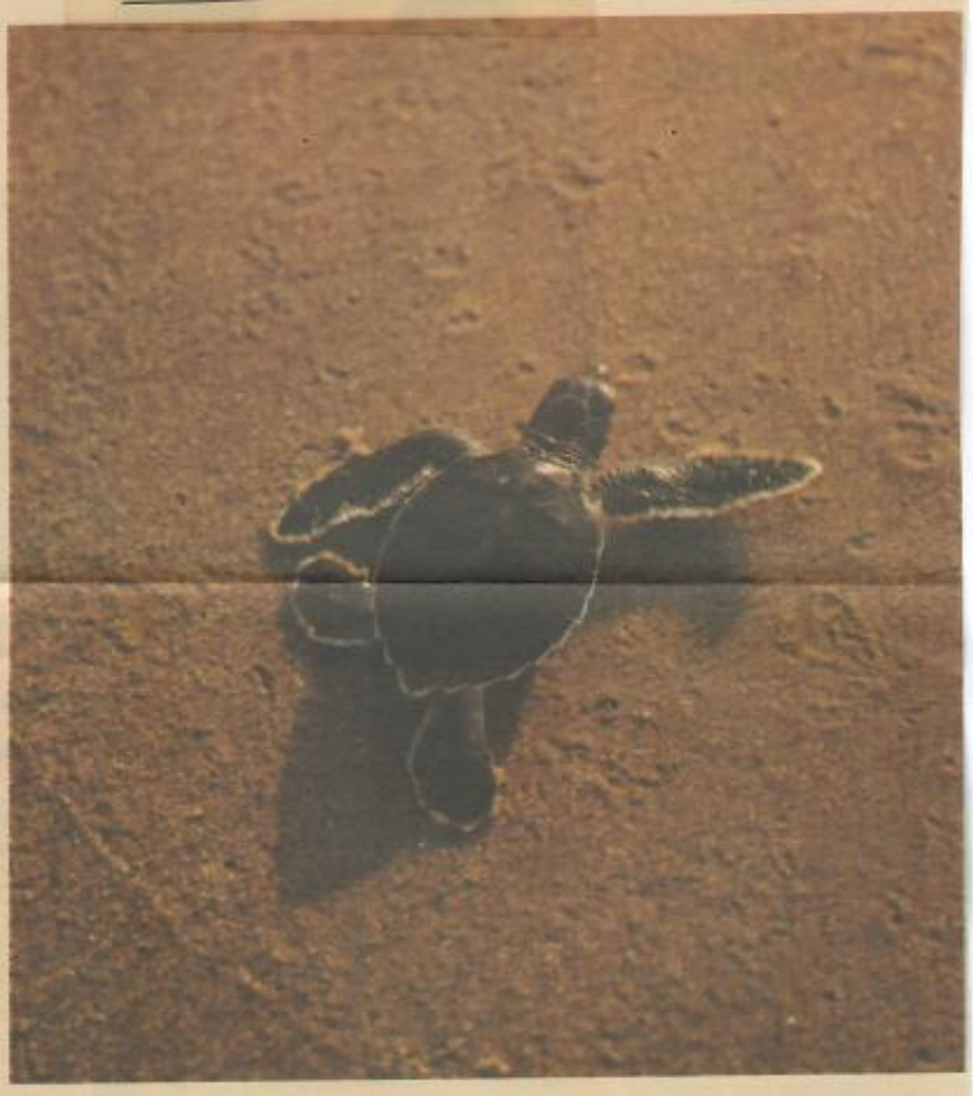
FISHING

■ **HB 51: Prohibits people who fish with gill nets from leaving their nets unattended without inspecting them every two hours and releasing undersized, illegal or unwanted catches. It also forbids leaving nets in the water for more than four hours in a 24-hour period.**

HEALTH

■ **SB 122: Extends state regulation of osteopathy until Dec. 31, 1999.**

■ **SB 192: Authorizes the Medical Claim Conciliation Panel to assess penalties on uncooperative parties.**



SOME ARGUMENTS FOR NUCLEAR ENERGY ARE SMALLER THAN OTHERS.

Around the nuclear electric plant on Florida's Hutchinson Island, endangered wildlife have a safe haven. The baby sea turtles hatching on nearby beaches are more evidence of the truth about nuclear energy: it peacefully coexists with the environment.

America's 110 operating nuclear plants don't pollute the air, because they don't burn anything to generate electricity. Nor do they eat up valuable natural resources such as oil and natural gas.

Still, more plants are needed—to help satisfy the nation's growing need for electricity without sacrificing the quality of our environment.

For a free booklet on nuclear energy, write to the U.S. Council for Energy Awareness, P.O. Box 66080, Dept. TR36, Washington, D.C. 20035.

NUCLEAR ENERGY MEANS CLEANER AIR.

Zoologist saddened b

One of endangered species, creature was carrying eggs

By TIMOTHY HURLEY
Staff Writer

HONOLULU — Turtle expert George Balazs wasn't feeling so hot last weekend, and who can blame him? An old friend had turned up, badly injured and helpless, and he couldn't do a thing for her.

The friend was a large green sea turtle he tagged in Kahului Bay eight years ago and tracked to a group of far-flung islands three years ago.

The adult female turtle washed up on the Paukukalo side of Kahului Harbor April 30 with three of its four limbs sliced off by a shark. A picture of the turtle appeared in The Maui News May 3.

State aquatic officials promptly shipped the injured green sea turtle, an endangered species, to Balazs, a National Marine Fisheries Service zoologist and turtle specialist based in Honolulu.

The next day Balazs, in consultation with a veterinarian, reluctantly decided to put the animal to sleep for humane reasons.

Even more tragic, however, was the discovery that this old friend had been carrying hundreds and hundreds of eggs and was nearing its nesting time.

"I couldn't help but feel saddened by this event," he said Friday.

The turtle — 38½ inches long, weighing 220 pounds and estimated to be anywhere from 25 to 40 years old — was originally tagged by Balazs in June 1985 in good condition. Nine large turtles were tagged in Kahului Bay in that National Marine Fisheries Service research project.

"Like so many turtles, we didn't hear from her for some time," Balazs said.

Not until May 1990 was it seen again, this time laying eggs at French Frigate Shoals, a popular egg-laying destination for turtles some 600 miles from Maui in the northern Hawaiian archipelago.

Balazs said the discovery of this animal on Maui last week provides further evidence that turtles migrate to nesting grounds and then return to feed in their home foraging grounds.

It is thought that green sea turtles in their reproductive years return to their own hatching place during mid-May to mid- to late-June to lay their eggs every two, three or four years. Their motherly missions often take them on long, perilous journeys.

Witnesses who saw the turtle wash in reportedly saw a shark circling offshore, and Balazs confirmed Friday that a sizable tiger shark sheared off both front flippers and a hind limb.

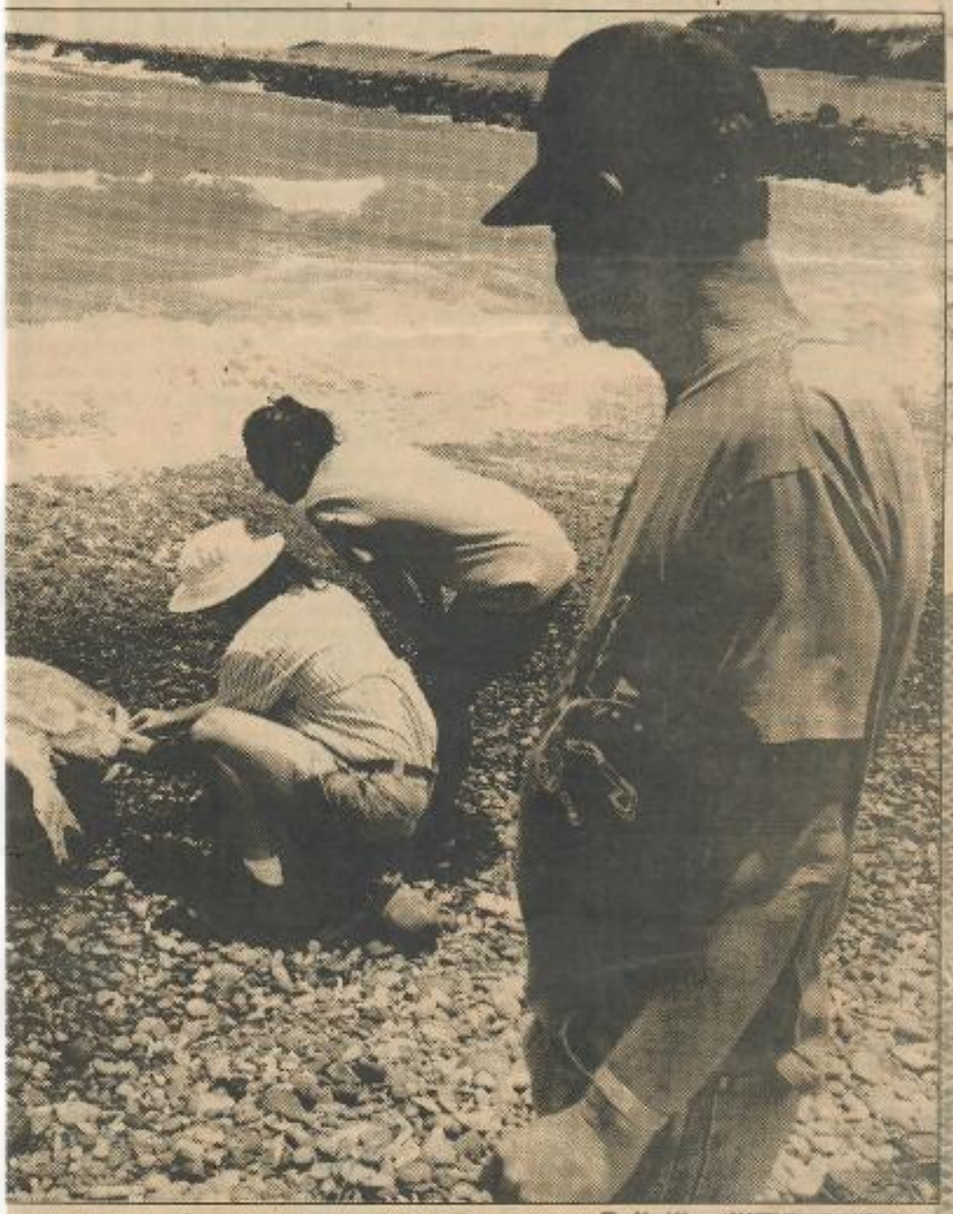
However, one of the flippers appeared to have be
week or two before
tack. Scabbing and
to be well under wa
he said.

That might explai
wasn't back on its
French Frigate Shoa
Balazs said.

Turtles are known
wild without one fli
swim much slower,

Passers-by attempt to assist an injured green
washed ashore in Kahului April 30. The creature

oy death of sea turtle



The Maui News / MATTHEW THAYER photo

ea turtle that was tagged in Kahului Bay eight years ago and last recorded three years ago in the French Frigate Shoals — 600 miles from Maui.

n amputated a the April 30 at- healing appeared on that flipper,

n why the turtle journey to the s to lay its eggs,

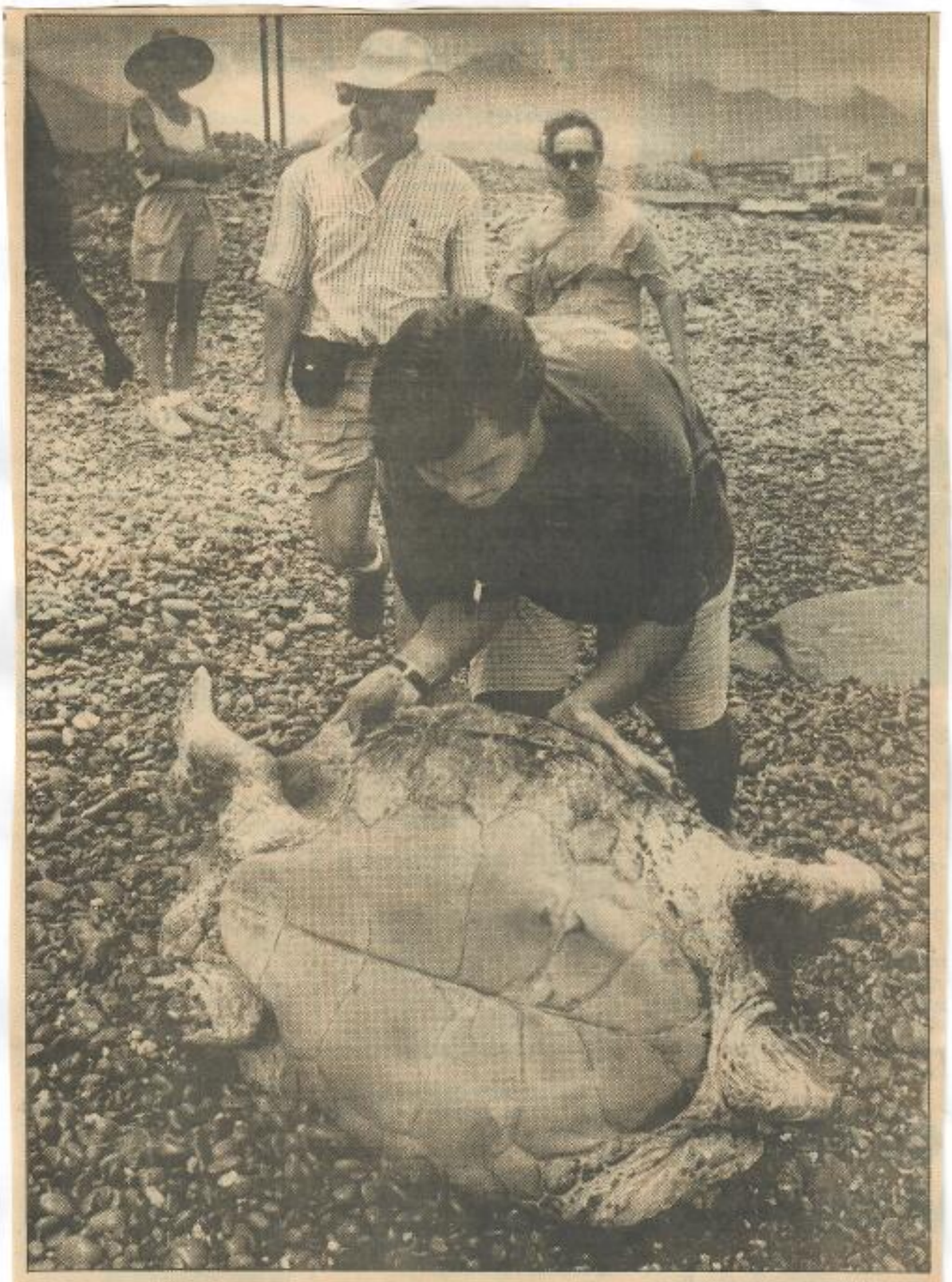
to survive in the per, though they he scientist said.

In an autopsy, the turtle's stomach and intestines were found to be surprisingly empty, suggesting that the flipper injury may have kept the turtle from grazing on seaweed for at least a week to 10 days.

Another surprise, Balazs said, is that the turtle even survived the tiger shark attacks at all. After all, turtles make frequent appearances in the tiger shark's diet.

"It really puzzles me — and this isn't the first time it's happened," he said. "Why on earth wouldn't the shark just gobble up this totally helpless, incapacitated animal? Why on earth would it just end up amputating the limbs? Certainly a couple of flippers isn't going to fill the belly of a shark."

Any tiger shark worth its weight can munch a green sea turtle easily, he said, because the turtle's shell is relatively soft in comparison to other turtles.



The Maul News / MATTHEW THAYER photo

Sea turtle dies after suspected shark attack

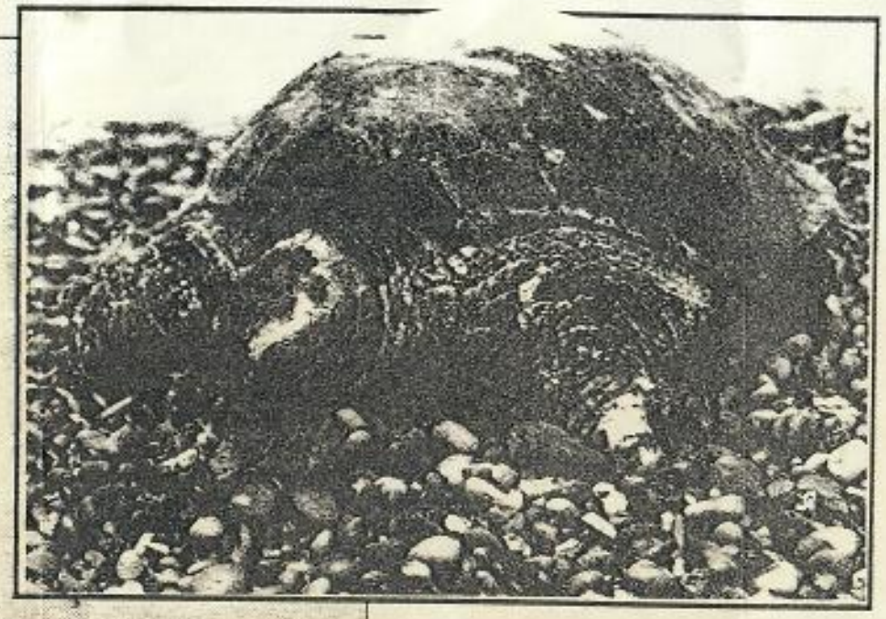
Kainoa Bright turns a green sea turtle over on its belly Friday morning on the shore on the Paukukalo side of Kahului Harbor. The badly injured turtle swam to shore after apparently being attacked by a shark. "When I saw him coming in he was trailing blood," Bright said. Fisherman Andrew Wallace said he spotted a large shark following the turtle and circling offshore after it beached. "When I saw it, I said, 'What is that thing?' " Wallace said. "That shark was at least 12 feet long." Bright and his uncle, Bernie Tuniensru, pulled the turtle up on the beach. The turtle sported a University of Hawaii research tag. Both front flippers were badly chewed and half of a back flipper was missing. The turtle did not survive, and state aquatic resources officials shipped the carcass to the National Marine Fisheries Service laboratory on Oahu for study.

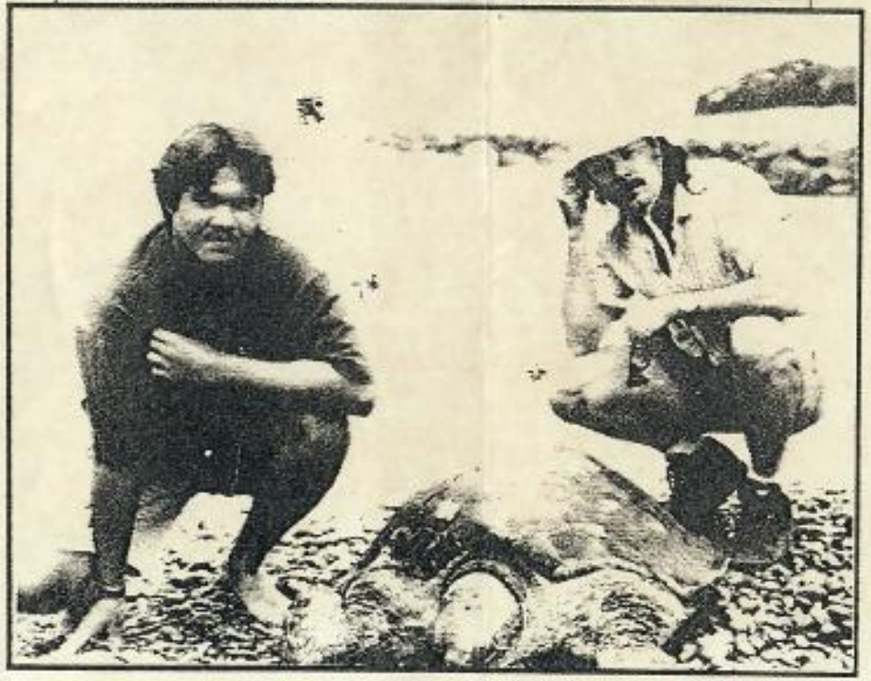
MAUI PRESS
(Local Tabloid)

May 7-13, 1993

This green sea turtle (photo right) was a victim of a shark attack in waters some 50 yards off the Kahului Beach Road shore last Friday (April 30). A fisherman saw the large shark attack the turtle, an endangered species. The turtle lost its left front and fore flippers and was bleeding profusely when bystanders Kainoa Bright of Pukalani and his Uncle Bernie Tuniensru, and Don Mitchell of Wailuku waded out to rescue the creature and take it out of harm's way. Bright and Mitchell are shown below. The Department of Land & Natural Resources was notified and the turtle was taken away for possible treatment.

Photos by Robert McCabe





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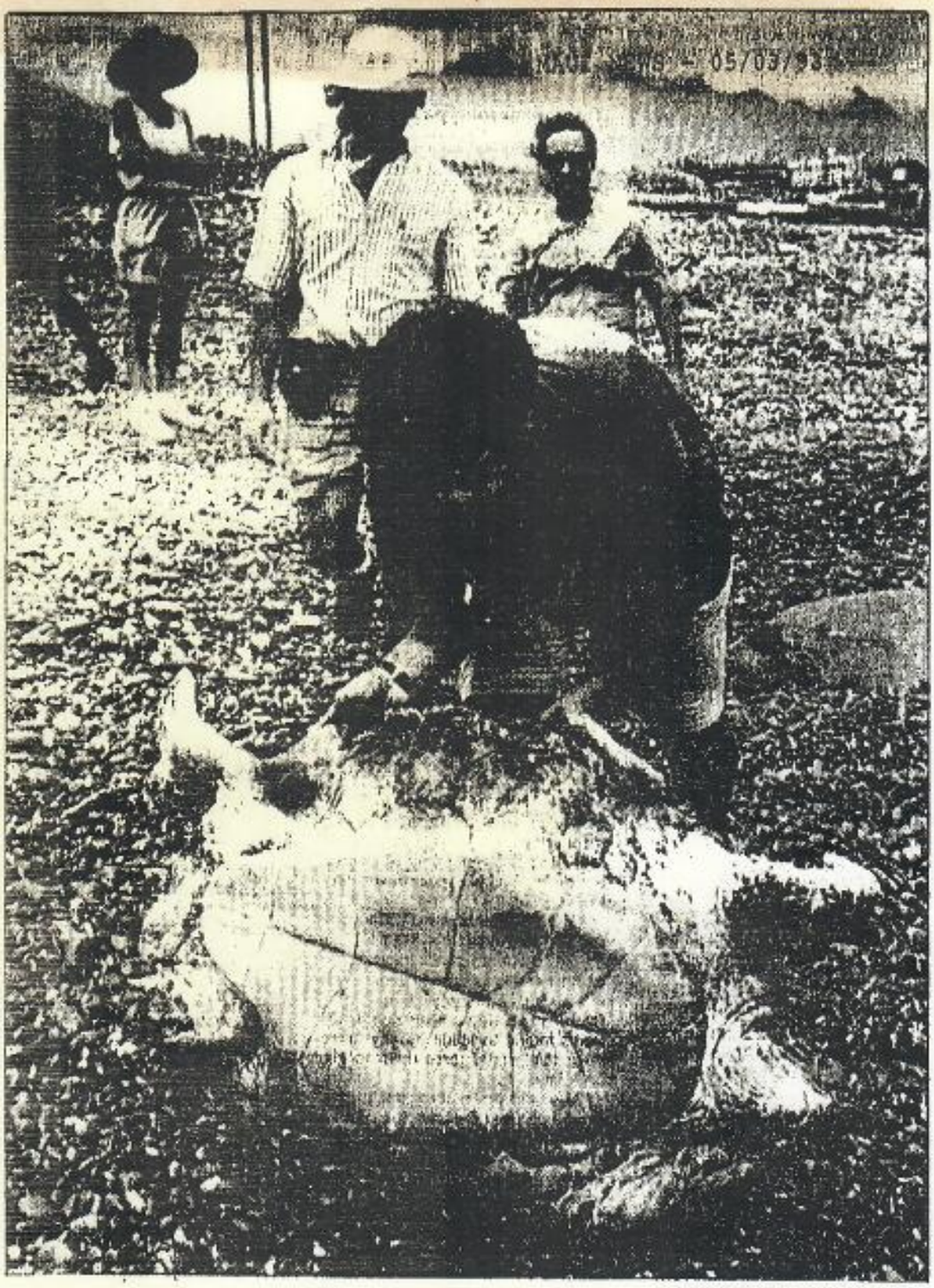

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5/3/93 THE MAUI NEWS

Waikiki's green turtle population is growing

OCEAN WATCH
By Susan Scott

2/22/93 A2
HONOLULU STAR BULLETIN

IN the past, Waikiki hasn't been a haven for green sea turtles, but a recent study shows that has changed.

Several years ago, increased sightings of turtles in Waikiki sparked the curiosity of Russell K. Miya, a Marine Option Program student at the University of Hawaii. Along with National Marine Fisheries Service biologist George Balazs, Miya designed a study to gather facts about the green turtles of Waikiki. The results, published in the February issue of the Hawaii Audubon Society's journal, Elepaio, show that more than 100 healthy turtles now browse and rest in the waters off Waikiki.

During the 10-month study, the researchers learned much more than just how many turtles live in the area. Workers observed turtle behavior by snorkeling and watching from the shoreline. They also set up an observation station in a 12th-floor Sheraton Waikiki Hotel room, donated by the hotel.

While other people were watching the sunsets from rooms-with-a-view, these researchers and their helpers were watching turtles, recording when, where and for how long the animals were grazing and resting.

The resulting data showed that Waikiki turtles usually graze within 300 feet of shore, eating the various kinds of algae that grow abundantly in the area. Most often, the turtles feed in late afternoon and early evening.

Between feedings, the turtles rest on the bottom in or near caves or reef ledges in two locations: near the Kapahulu seawall and in an area off Fort DeRussy called Canyons. At Canyons, turtles regularly get "cleaned" by surgeonfish and wrasses, a behavior that researchers still don't fully understand.

In order to find out exactly what the greens are eating, researchers caught several by hand or nets, then inserted a plastic tube through their mouths and into their crops. By flushing sea water into the tube, the researchers could collect and analyze food particles.

All four turtles sampled had eaten several kinds of native algae, but two of three turtles caught off the Sheraton had also eaten an alien red seaweed introduced from Florida in 1974. One of those turtles had paper in its crop. A fourth turtle, captured near the Kapahulu seawall, had eaten only the native alga called sea lettuce.

Not to waste an opportunity, Balazs and Miya measured, weighed and tagged 15 of the Waikiki turtles for long-term monitoring.

While most would agree that an increase in Hawaii's green turtle population is good, there is a down side. During the study, three green turtles were found dead on Waikiki Beach, two with propeller slashes on their bodies, one a gillnet mortality. Obviously, when an endangered species begins to thrive in a crowded human hang-out, we need to rethink our use of that space. The turtles have a right to be there without drowning in unattended nets or getting wacked to death by propellers.

Interestingly, shark predation and disease did not appear to be major factors in the lives of the Waikiki turtles. Only one turtle had a piece of its shell missing, presumably the result of either a shark bite or a propeller hit, and only one turtle had tumors.

Speaking of turtle tumors, I recently watched an excellent video called "Fall of the Ancients, Hawaii's Green Sea Turtles in Crises" produced by the Honu Project in association with Earthtrust. This well-done, 45-minute video shows the greens in all their glory and all their distress.

I thought I knew quite a bit about turtle tumors but I learned a lot more. Some statistics were shocking. From 1982-85, Balazs and workers tagged 397 greens in Molokai waters and not one had tumors. In 1988, about 5 percent of those had tumors. The next year, 10 percent were afflicted. By the end of 1990, 25 percent of Molokai's tagged turtles had this fatal disease and 1991 is the worst yet: 36 percent. These numbers are rapidly approaching the 50 percent figures currently seen in Kaneohe Bay.

The video examines Hawaii's turtles, highlighting the work of Balazs, then goes to Florida where greens are suffering a similar epidemic.

I highly recommend this video for schools, dive clubs and all those interested in Hawaii's marine life. Call John Lindelow at 236-4544 for information.

Susan Scott is a marine science writer and author of three books about Hawaii's environment. Her Ocean Watch column appears Monday in the Star-Bulletin.

1993 should be a good year for hawksbill turtle

OCEAN WATCH
By Susan Scott

1/11/93 HSB A2

I have some hawksbill turtle news left over from 1992 that should make 1993 a better year for our flippered friends. They certainly need some better years soon or there won't be any hawksbills left to worry about.

Of the seven species of sea turtles in the world, the hawksbill is the most seriously endangered, mainly because of international trade in their shells. Hawksbills have unusually thick and lovely shells, both on the belly and back, that has been their kiss of death.

But now there's good news: Japan has finally agreed to stop importing shells of the endangered hawksbills and olive ridelys (another kind of sea turtle) by the end of 1992. Now.

How did this happen? In an important victory for sea turtles and other endangered species worldwide, the Bush administration and several wildlife groups put the pressure on Japan in the form of the Pelly Amendment.

This amendment, added to the Fishermen's Protective Act 14 years ago, authorizes the president to impose trade sanctions on countries dealing in endangered species.

No administration has used it until now, and it worked. Japan was the last big market for these creatures and the end of that should make a substantial difference to the survival of the species.

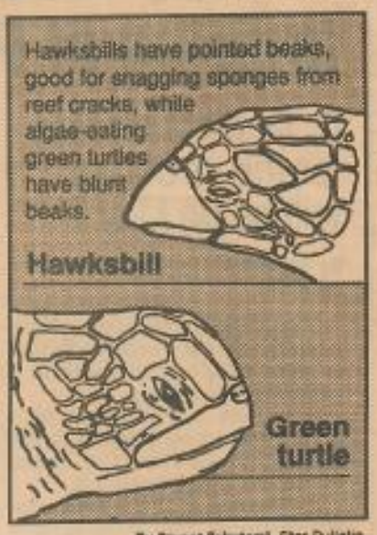
According to the U.S. Department of the Interior, Japan imported the shells of at least 234,000 hawksbills in the '80s and more that 18,000 in 1990 alone. Artists used the tortoise shell, called bekko, to make jewelry, eyeglass frames and other expensive art.

Some people are worried about Japan's intentions because even though the import of hawksbill shells has stopped, the selling of tortoise shell items will still be allowed until mid-1994.

Japanese officials give three reasons for this late date: First, it allows dealers to sell their existing stock. Second, it gives the artists time to find appropriate substitute materials for their trade. And third, the Japanese government intends to conduct its own surveys of the turtles to reassure skeptical workers that the ban is justified.

The only other countries that still officially allow trade in hawksbill shells are Cuba and St. Vincent, a Caribbean island nation.

Hawksbill turtles are native to Hawaiian waters, but are currently rare. Although researchers have no information about how many hawksbills lived in Hawaii in the distant past, it's likely that there were many more then than now.



By Bryant Fukutomi, Star-Bulletin

Ancient Hawaiians called these turtles ea and used the shells for fishhooks, jewelry and as part of the handle of the kahili, a staff that signifies royalty.

Unlike its green turtle cousins, Hawaiian hawksbills don't nest in the northwest chain, but rather lay eggs on Oahu, Molokai and Hawaii. Recently, the first hawksbill nest ever was discovered on Maui by the staff of the state land department.

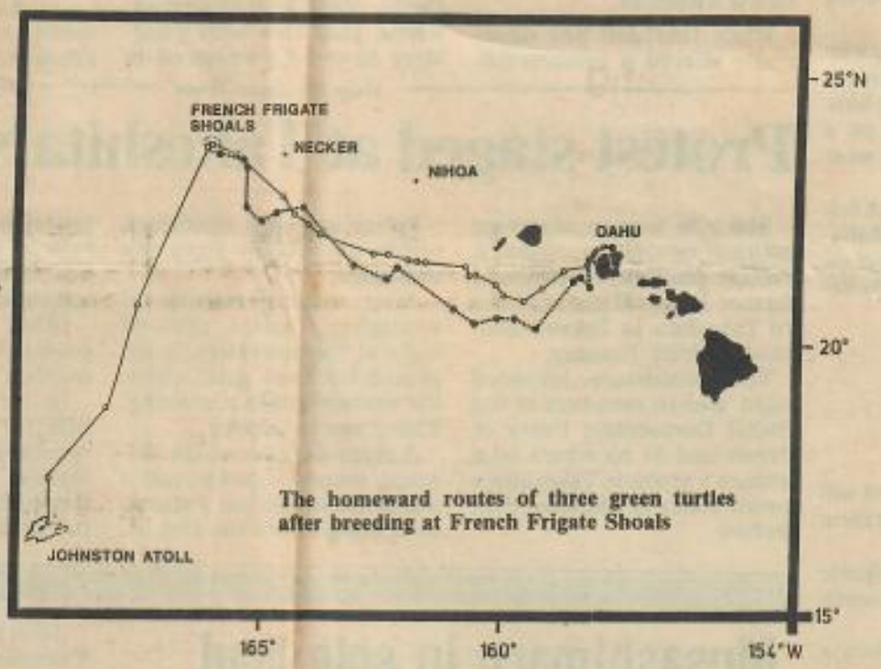
In the nest, workers found 87 unhatched eggs, eight dead hatchlings, 11 living hatchlings and 86 empty egg casings. The 11 babies were released and hopefully, some of the 86 hatchlings made it to sea.

Susan Scott is a marine science writer and author. Her column appears Monday in the Star-Bulletin.

turtles tracked on homeward voyages

In August 1992 scientists of the National Marine Fisheries Service Honolulu Laboratory attached small, satellite-linked transmitters to the shells of three adult green turtles nesting at French Frigate Shoals in the Northwestern Hawaiian Islands. The research was directed by George Balazs of the Honolulu Laboratory; personnel of the U.S. Fish and Wildlife Service, the agency responsible for the French Frigate Shoals National Wildlife Refuge, also assisted with the research project.

The Argos satellite system to which these transmitters are linked is jointly sponsored by the United States and France. Currently, two satellites in polar orbits circle the earth about every 100 minutes and receive signals from Argos-approved transmitters. The transmissions are initially relayed to France where the exact location of each signal is computed and forwarded with other data to an Argos facility in Maryland. These data are made available to researchers throughout North America. Argos satellites are used to track a wide variety of wildlife. They are also used to track drifting buoys that provide information on currents and other oceanographic features.



The homeward routes of three green turtles after breeding at French Frigate Shoals

Over a 4-week period all three turtles were successfully tracked during their homeward migrations across the high seas. Two of the turtles traveled to Kaneohe Bay on Oahu, and the third turtle swam directly to Johnston Atoll, located about 500 miles south of French Frigate Shoals. Both of the Kaneohe Bay-bound turtles followed approximately the same route, swimming well south of the island chain over open ocean. Scientists were surprised to find that the turtles did not travel from island to island, a route which offers short stepping stones and "landmarks" between French Frigate Shoals and the main Hawaiian Islands. Instead, the turtles' chosen routes took them over exceedingly deep water where no known navigation guideposts exist.

The turtles traveled at an average speed of about 1 mile per hour, generally against prevailing winds and ocean currents. One turtle traveled 610 miles in 23 days and the other 680 miles in 26 days.

The transmitter batteries are expected to last until December and the whereabouts of all three turtles will be relayed by satellite until then. Sometime between now and December efforts will be made to recapture the turtles in Kaneohe Bay and retrieve the transmitters for reuse.

In the past, the use of metal flipper tags at French Frigate Shoals has demonstrated that adult green turtles, both male and female, migrate to breed at this remote location from seaweed foraging pastures scattered throughout the main Hawaiian Islands. Some of these locations are as far away as 800 miles. However, there are many unanswered questions about these ocean voyages, including routes followed, travel speed, trip duration, method of navigation, and whether or not the turtles return to the exact foraging pastures.

The fibropapilloma disease currently affecting many green turtles in Hawaii also raises a question as to how this disease affects a turtle's ability to successfully accomplish these lengthy migrations. Long-distance tracking of sea turtles by satellite offers the potential to provide answers which are vital in the long-term management and conservation of Hawaiian green turtles as a protected species under the U.S. Endangered Species Act.

11/9/92 HSB A6

TURTLES: Trek theory linked to magnetic field

Continued from Page A-1

south of the island chain over open ocean.

Balazs had thought they might travel from island to island, using landmarks between French Frigate Shoals and the main Hawaiian Islands, Boehlert said.

However, the turtles followed the same route over deep water where there are no known navigational guideposts, he said.

Turtles are known to make long-distance migrations because of a tagging program Balazs has conducted here and at Johnston Atoll for many years, Boehlert said.

He has tagged thousands of male and female turtles at French Frigate Shoals, showing they migrate to breed there from seaweed foraging pastures scattered throughout the main Hawaiian Islands.

Some locations are as far as 800 miles apart.

But Boehlert said, "This is really one of the first times we've got a good idea that there is some integrity to the movement pattern. We have never known the paths they've taken from one place to another."

Questions remain about their routes, travel speed and time, navigation method and whether they return to the exact foraging pastures.

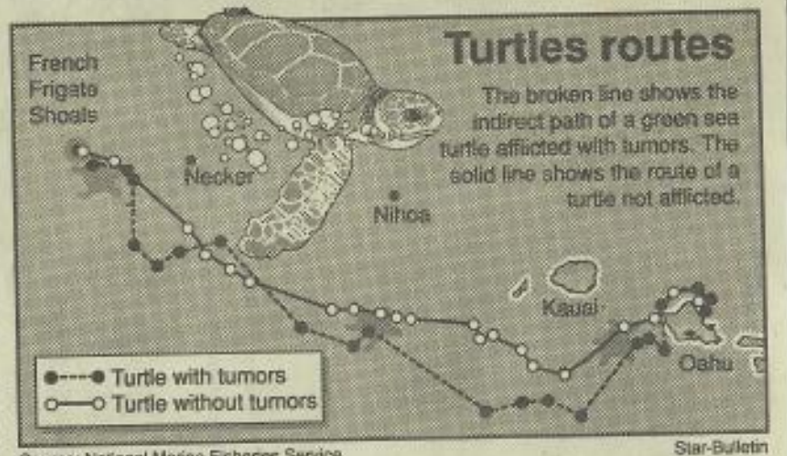
"With such few numbers, we don't have good ideas what mechanisms they use (to navigate)," Boehlert said.

One theory is they may use the Earth's magnetic field, he said. "It's even possible they might use celestial cues, the structure of stars."

The scientists hope to continue tracking the sea turtles by satellite to glean information needed to manage and conserve them as an endangered species, Boehlert said.

The scientists also are questioning if turtle migrations are affected by a disease afflicting many Hawaiian green turtles with tumors.

One turtle moderately affected by the disease, fibropapillomas, took a less-direct route and a longer time to reach Kaneohe Bay, Boehlert said.



Source: National Marine Fisheries Service

Star-Bulletin

He said the transmitter batteries are expected to last until December and scientists will keep tabs on the three turtles until then via the satellites.

They also will be on the lookout for the turtles to try to retrieve the transmission packages, which look like little backpacks with antennas coming out of them, Boehlert said.

Batteries could be replaced to reuse the transmitters, which would be ideal because each package costs about $2,500, he said.

"Obviously, there is very high value in terms of the data that comes out of it. There is no other way (of getting the information), short of following the turtle, which would be virtually impossible."

Some transmitters also have been attached to monk seals in a Honolulu laboratory program at French Frigate Shoals to see how far offshore the animals go to get food, Boehlert said.

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HAWAII TRIBUNE HERALD

NOV 5 1992

Marine turtles

Dr. George Balazs of the National Marine Fisheries Service will discuss the magnificent marine turtles of Hawaii at the next Reeftalk presentation.

Balazs is internationally recognized as a leading researcher of sea turtles. He is a trained zoologist, and leads the Marine Turtle Research Group at the National Marine Fisheries Service in Honolulu. He is also the deputy chair of the Marine Turtles Specialist Group of the International Union of the Conservation of Nature and Natural Resources.

This special presentation will take place on Sunday, Nov. 22, from 4 to 6 p.m. at the Hyatt Regency Waikoloa in the Kohala Room. The event is free and open to the public.

Reeftalk is a public presentation series on the marine and coastal environment sponsored by the UH Sea Grant College Program and the Malama Kai Foundation. Additional support for this program comes from the Hyatt Regency Waikoloa and Media Associates, Inc.

The case of the mysterious disappearing isle

By Jan TenBruggencate
Advertiser Kauai Bureau

A mysterious low island, in the vicinity of Kauai and Niihau, has been missing for more than 200 years.

Where was it? What happened to it?

It is a puzzle that has perplexed people since the men of Capt. James Cook's first visit to Hawaii heard of it in 1778.

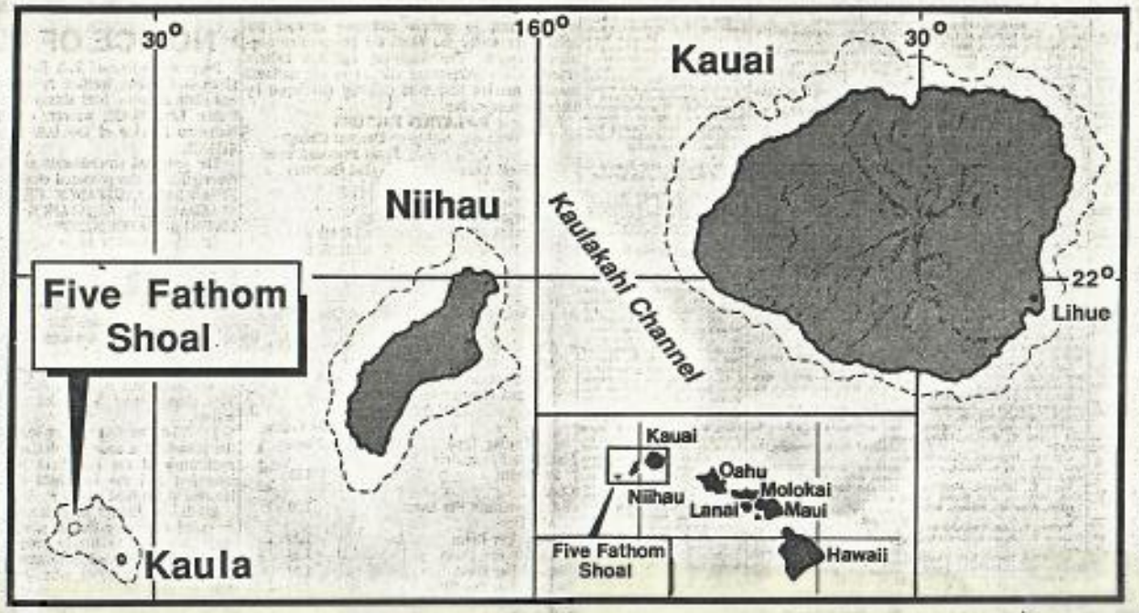
The British voyagers heard of this island, which they wrote as Modoopapappa or Tammata pappa, at least three times. In modern spelling, those names probably come out Moku papapa or Ka moku papa. (Ka in Hawaiian is the definite article, "the.")

Capt. Charles Clerke specifically looked for it in early 1779, after Cook's death. He even came across a canoe heading for it, but Clerke never found it.

Clerke believed he was looking for a sandy island, where no people lived, but where turtles were known to haul out of the water. The men in the canoe said they were going to catch some of those turtles at that place.

The island's location is fixed on no chart.

Various descriptions have it to the southwest of Kauai and



Map shows the location of an area known as Five Fathom Shoal. Kauai diver Sam Lee said it is shaped like an ice cream cone, with the top flat and the sides dropping steeply to the black depths below. While the area may be the mysterious "missing island," others say there is no evidence it could have been at the surface or supported a sandy area as little as 200 years ago.

Advertiser newsmap

Balazs, who studies sea turtles for the U.S. Fish and Wildlife Service, said he visited the spot and finds it unlikely.

Balazs said he received one

Niihau, could once have supported a sand bar. It does not, today.

Finally, there is the likelihood that the Europeans on

words could mean many other things.

"Moku and papa are both pretty common words," he said. Moku can be an island, a district, a severed portion of some-

he said.

"Moku papa can just mean a rock," he said.

The word papa'u can mean a sand bar or a shallow place.

The Hawaiians in the canoe

There are enough small islands off the coasts of Kauai and Niihau to meet the rough description. It is quite likely the Hawaiians were referring to an island or islands that did

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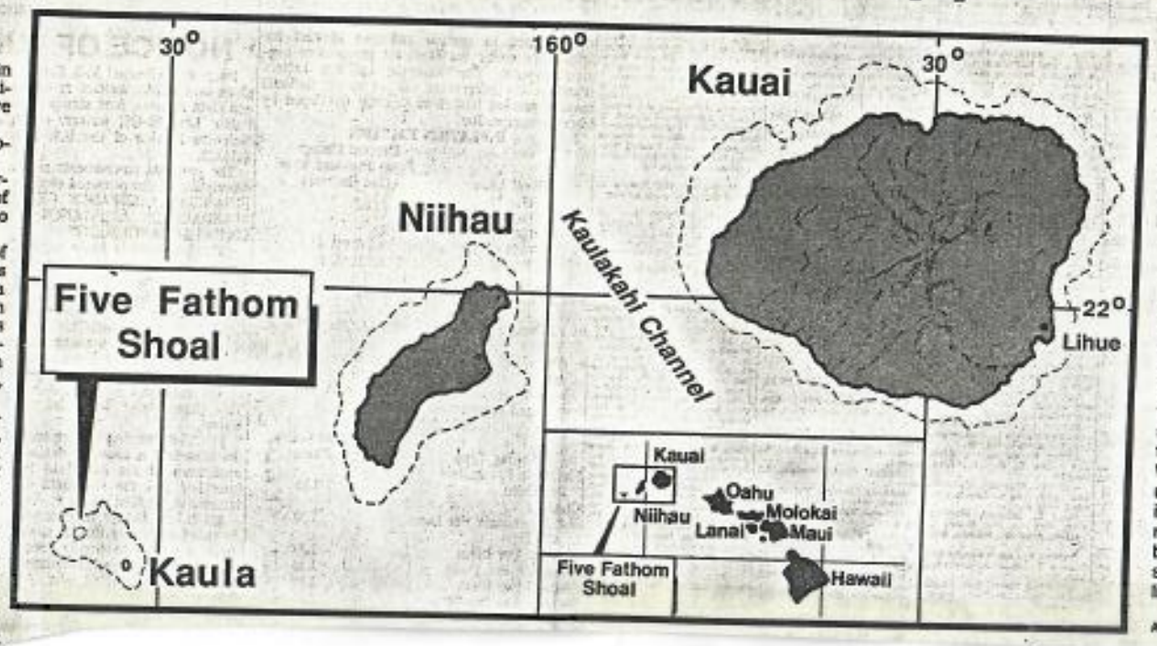


Map shows the location of an area known as Five Fathom Shoal. Kauai diver Sam Lee said it is shaped like an ice cream cone, with the top flat and the sides dropping steeply to the black depths below. While the area may be the mysterious "missing island," others say there is no evidence it could have been at the surface or supported a sandy area as little as 200 years ago.

Advertiser newsmap

The island's location is fixed on no chart.

Various descriptions have it to the southwest of Kauai and Niihau. Clerke thought it was southwest of Kaula, an islet southwest of Niihau. It wasn't. The nautical charts show no shallow places in that direction.

Dave Nekomoto, executive officer of the Pacific Missile Range Facility on Kauai, flies over the waters off Kauai and Niihau. He said he knows of no shallow reefs or sand bars off Kaula.

Koichi Masaki, a veteran Kauai fisherman, is credited with discovering the only thing close to a shallow off Kaula. It is a rock pinnacle that reaches within 30 feet of the surface, about 6 miles northwest of Kaula.

Masaki said that in all his years of fishing the waters, he located nothing else in the area that would meet the description of Clerke's island.

Victor Lipman, who with turtle expert George Balazs studied the issue for a 1983 article in "Honolulu" magazine, came up with Masaki's pinnacle as the only likely answer.

Kauai diver Sam Lee, who calls it Five Fathom Shoal, said it is shaped like an ice cream cone, with the top flat and the sides dropping steeply to the black depths below. And that flat top is not much bigger than a floor in a good-sized office building, Lee said.

Could the "island" have simply been a sunken reef? Would Hawaiians have collected turtles feeding and resting at such a spot?

Balazs, who studies sea turtles for the U.S. Fish and Wildlife Service, said he visited the spot and finds it unlikely.

Balazs said he received one report that pre-Cook Hawaiians might have built a platform, hauled it out there and anchored it to the pinnacle to collect turtles.

"At first it sounded absolutely ludicrous," he said, but he considered it. Balazs said he concluded no such platform could have survived in those open ocean conditions long enough to become a regular turtle collection spot.

A man familiar with Hawaiian folklore said there were traditions in Hawaii of ghost islands, "certain legendary islands that were supposed to pop up and disappear." But that would not account for a spot so firm that you'd go looking for turtle there.

Another theory is that the sandy island named is actually one of the low islands of the Northwestern Hawaiian Islands. The next two islands beyond the Kauai-Niihau group are rocky Nihoa and Necker, but beyond them extends the chain of sandbars and shoals, beginning with French Frigate Shoals.

However, a Kauai canoe on a short fishing trip would not be going hundreds of miles across open ocean for turtles. There were enough turtles around the main islands.

There is also the possibility the island referred to was one of the many small islands and rocks off Niihau. One fisherman suggested Kuakamoku, a rock off the southwestern coast of Niihau, could once have supported a sand bar. It does not, today.

Finally, there is the likelihood that the Europeans on Cook's ships simply misunderstood their informants.

One meaning of Moku papa could be flat island, but Samuel H. Elbert, co-author of "Place Names of Hawaii," said the words could mean many other things.

"Moku and papa are both pretty common words," he said. Moku can be an island, a district, a severed portion of something, he said. Papa can refer to a native offspring, things growing thickly together, a kind of lava, a part of a fishing net or a wind of a specific area, he said.

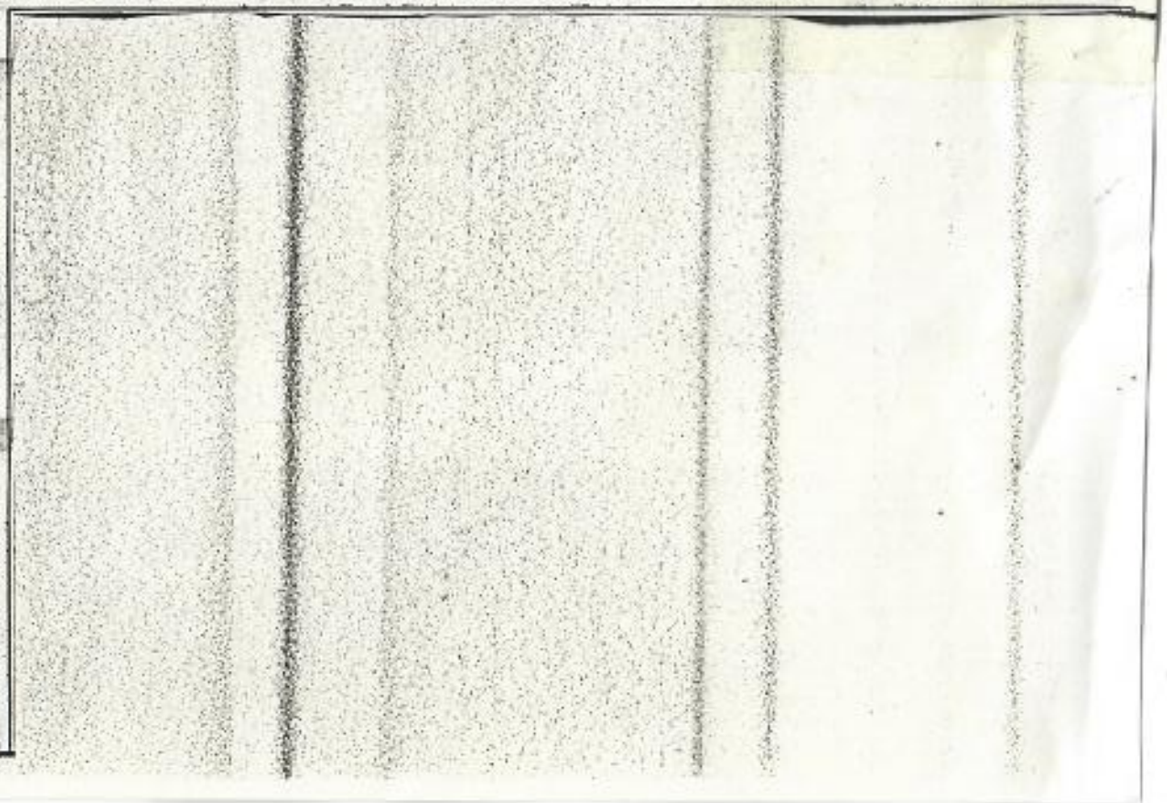
"Moku papa can just mean a rock," he said.

The word papa'u can mean a sand bar or a shallow place.

The Hawaiians in the canoe Clerke saw could have been saying they were going to an islet or reef where turtles gathered, rather than giving the specific name of the place.

There are enough small islands off the coasts of Kauai and Niihau to meet the rough description. It is quite likely the Hawaiians were referring to an island or islands that did and still do exist. We just don't know which.

Or maybe there was a disappearing island, which has remained invisible all these years.



By Susan Scott, special to the Star-Bulletin

Harassment by humans has forced sea turtles to mate away from prying eyes.

Sea turtles avoid hassles of man, skirt main isles

OCEAN WATCH
By Susan Scott

ONCE I was lucky enough to watch a female sea turtle come ashore to lay eggs.

The sun was setting as the animal emerged from the sea. She accepted one last boost from a small wave and landed smoothly on the white sand.

After a moment's rest, she began her long journey up the beach, inching along with flippers better suited to swimming.

Slowly, with great effort, the turtle scooted her way toward the top of the beach, stopping frequently to catch her breath. Since sea turtles spend most of their life in the ocean, movement on land is difficult for them.

I left the beach then, not wanting to disturb this turtle's mission. She probably spent the night digging a hole with hind flippers, then, hopefully, laid her precious eggs.

Most people in Hawaii will never have the opportunity to watch sea turtles nesting because six of the seven species of marine turtles are listed under the federal Endangered Species Act as endangered or threatened.

Sea turtles once nested on the main Hawaiian Islands, but now nearly all egg laying takes place in the Hawaiian Island National Wildlife Refuge of the remote Northwest Hawaiian Islands.

A few turtles still come ashore to dig nests in secluded spots of the main islands, but these places are kept secret by wildlife managers.

In spite of the law and sea turtles' precarious existence, people still capture and eat sea turtles and their eggs.

The nesting season of the Hawaiian green sea turtle, or *honu*, begins soon. From May through August these turtles migrate from the coasts of the main islands to the northwest chain.

There they mate in shallow water. Females then crawl ashore to dig nests and lay eggs. The nests in the refuge are safe from people, mongooses, pigs, dogs and cats, the land predators that have reduced sea turtle populations to dangerously low levels.

Tens of millions of sea turtles once dotted the world's oceans. Now, only 100 to 350 females nest in Hawaii each year.

You can help sea turtles in the following ways:

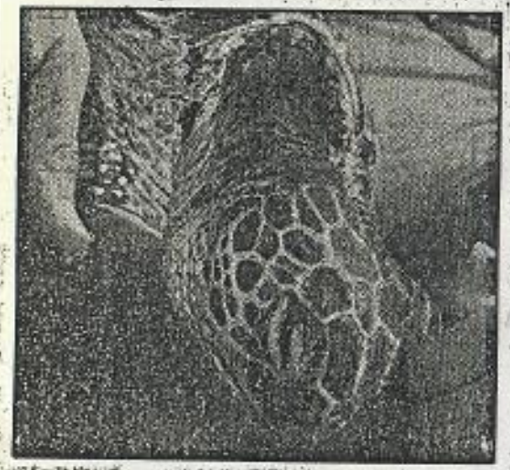
- If you observe sea turtles being captured, harmed or killed, call the National Marine Fisheries Service (NMFS) at 541-2727 or the state Conservation and Resources Enforcement office at 548-5918.
- Report nesting or basking activities, and dead, sick, injured or accidentally captured turtles to NMFS, Sea Life Park or the Waikiki Aquarium.
- Refuse to eat any soup or food claimed to have sea turtle meat in it.
- Don't buy or admire "tortoise-shell" jewelry or leather made from sea turtle skin.
- If you come upon a sea turtle while snorkeling or diving, do not attempt to touch it, ride it, or spook it out of its resting place. This is harassment and frightens these gentle animals.

If we will share our beaches with these animals, stop harassing them and stealing their eggs, the sight of sea turtles crawling up a beach could once again be a common sight in Hawaii.

Susan Scott is a marine biologist and free-lance writer. Her Ocean-Watch column appears Monday in the Star-Bulletin. Write her at the Star-Bulletin, Box 3080, Honolulu 96802.

HA & HSB 1985-86

Group fights to save turtle's life



By Terry Lake, Star-Bulletin

This green sea turtle, called "Mr. T" by rescuers, has a man-made puncture wound in its neck.

☐ The endangered animal's outlook is grim after it is hit with a spear gun

By Helen Altonn
Star-Bulletin

A young green sea turtle — an endangered species protected under state and federal laws — is fighting for its life with partial paralysis caused by a man-made puncture wound in its neck.

"The outlook is grim," said sea turtle specialist George Balazs, watching over the animal at the National Marine Fisheries Service's Honolulu Laboratory.

The injured turtle is a juvenile, about 5 to 6 years old, he said. Its sex can't be determined until it's older.

Balazs is keeping the animal cool with wet towels in a cardboard box. It can raise its head and has some movement in its back flippers, but its front flippers are limp.

"Isn't that sad?" said Gene Witham, senior enforcement agent for the fisheries service in this area. "He should be out in the ocean."

The animal's rescuers at Sunset Beach also were concerned.

Carole Beller and Richard Whyte were snorkeling at Kammie's surfing break, across the channel from Sunset Beach, at about 4:45 p.m. Sunday when they

See **TURTLE**, Page A-8

Numbers to call

Injured or dead sea turtles and actions harming or disturbing them should be reported. You can call:

- National Marine Fisheries Service Enforcement Office, 541-2727
- State Conservation and Resources Enforcement Office, 548-5918

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TURTLE: Group fights to save injured animal

Continued from Page A-1

saw the turtle. He was in a ravine in the reef, about 8 to 10 feet under water, Beller said.

Whyte dove down and brought the turtle to the surface. It wasn't breathing and wouldn't move his flippers, Beller said.

"We didn't know what to do, but finally he started breathing a little bit. We held him in the water and swam with him. Richard pumped his shell — giving him artificial respiration."

They decided he would die if they let him go, so they took him to the shore, she said.

"We started calling all the places we could think of to call, to put some effort into saving his life, although we were not convinced that was the best thing to do. We thought maybe letting him go back into the ocean and die a natural death was the best thing to do."

"But people started to come around, with the spirit of saving an endangered species," she said.

"It was a whole beach adventure from 5 to about 9 p.m. Everyone was concerned. I was amazed at all the people in the neighborhood, kids and adults, everybody got into (trying to save) this little guy.

"We don't even care for each other like all of us care for this turtle. It was the cutest little thing."

By Terry Luke, Star-Bulletin

National fisheries experts George Balazs, left, and Gene Witham say the injured green sea turtle can raise its head and has some movement in its back flippers, but its front flippers are limp.

They named the animal, who is about 17 inches long, Mr. T and built a little pool for him at the edge of the ocean, she said. "He was in water up to his nose. . . . He started breathing better, so we thought there was a lot of hope."

But while cleaning him off, they noticed he had been punctured, Beller said. They had seen some young people spearfishing in the area earlier, she said.

A state conservation officer picked up the turtle at about 9 p.m. Sunday and took him to Sea Life Park, which alerted Balazs yesterday morning.

Witham also had been notified by the U.S. Fish and Wildlife Service and was checking into a possible violation of the federal endangered species act.

Ronald Kama, Oahu branch chief of the state Conservation and Resources Enforcement Division, said his staff also will pursue any violations of the state law. But, he added, "Trying to find who injured a turtle is like finding a needle in a haystack."

Barry Choy, who assists Balazs with the turtle program, said he thought the puncture hole — about the size of an ice pick — was caused by a hinge gun, a spear with a very small diameter.

The hole is very deep, apparently severing some nerves so the turtle could not move its front flippers, Balazs said. "The first thing any turtle does is flip its front flippers, even when it is weak."

Green sea turtles are on the endangered species list to help the populations build up because they are in danger of extinction, Witham and Balazs emphasized.

"This kind of action certainly sets that back," Witham said.

Molesting, harming or disturbing the turtles in any way is against federal and state law. That includes grabbing turtles and riding them to the surface — a popular sport, Witham said.

Criminal penalties include a fine of up to $25,000 and one year in jail. Civil penalties are up to $10,000 and six months in jail.

With 70,000 scuba-diving tourists estimated in Hawaii annually, Balazs and Witham are concerned about increased stress to the animals.

They ask that people avoid areas in which they see turtles.

Some dive-charter skippers are encouraging use of turtles for "show and tell," Witham said. "They are subject to arrest, and if we can prove it, they will be arrested."

He said the fisheries service is getting increasing reports of injured or dead turtles, probably because of three factors — more awareness that they are threatened animals, more turtles because they are protected and more poaching.

Witham said he has about five to six turtle cases a year.

FORUM

the Readers' Page

Serving Turtles in Restaurants

In spite of existing federal and state laws, several restaurants located on Oahu and the Neighbor Islands continue to sell sea turtle steak and soup. These items do not always appear on the regular menu, but rather may be offered as the "special of the day," either verbally or with a clip-on card. There are really only three explanations that can account for the meat products being offered by these establishments. That is:

1—The meat was illegally imported into Hawaii directly from a foreign country after May 1979, or illegally transported to Hawaii from another state after September 1979, the dates when the shipment bans went into effect.

2—The meat was obtained from our Hawaiian sea turtles which were illegally killed.

3—The meat was brought to Hawaii prior to the shipment bans and therefore has been sitting in a freezer for a minimum of 12 months before being thawed and served.

None of these possibilities is palatable.

If turtle meat older than 12 months is indeed being served, certainly it would have degraded to the point of being unwholesome, and possibly even unhealthy.

If the restaurants in question are selling illegally imported meat, or are somehow involved in the killing of Hawaiian turtles, then wildlife officers need to vigorously pursue the offenders.

Regardless of which is the case, conservation ethics and good sense make it advisable for the public to avoid restaurants still selling turtles.

George H. Balazs

The case of the

By Jan TenBruggencate
Advertiser Kauai Bureau

A mysterious low island, in the vicinity of Kauai and Niihau, has been missing for more than 200 years.

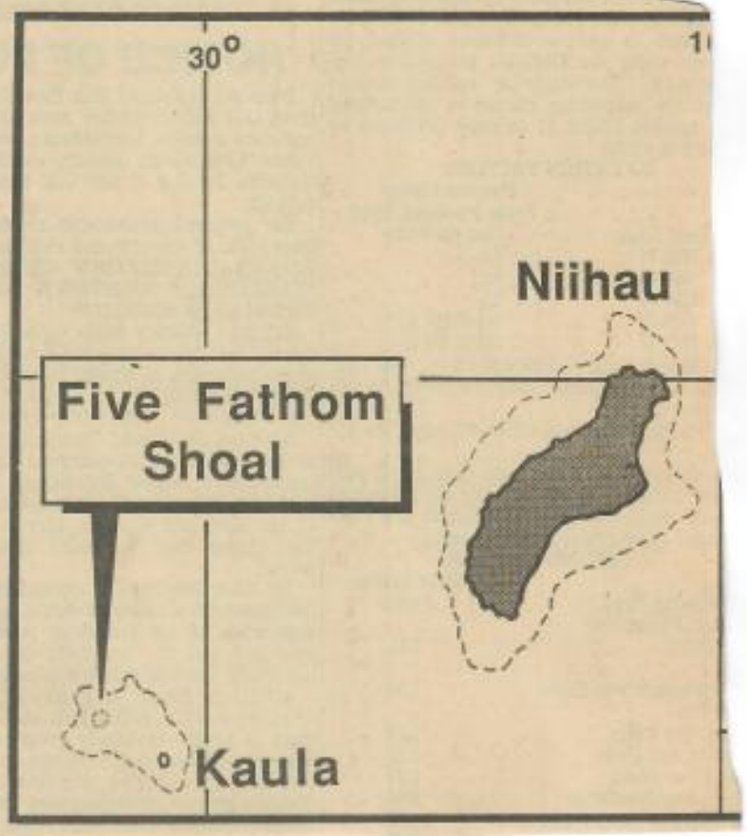
Where was it? What happened to it?

It is a puzzle that has perplexed people since the men of Capt. James Cook's first visit to Hawaii heard of it in 1778.

The British voyagers heard of this island, which they wrote as Modoopapappa or Tammata pappa, at least three times. In modern spelling, those names probably come out Moku papapa or Ka moku papa. (Ka in Hawaiian is the definite article, "the.")

Capt. Charles Clerke specifically looked for it in early 1779, after Cook's death. He even came across a canoe heading for it, but Clerke never found it.

Clerke believed he was looking for a sandy island, where no people lived, but where turtles were known to haul out of the water. The men in the canoe said they were going to catch some of those turtles at that place.



The island's location is fixed on no chart.

Various descriptions have it to the southwest of Kauai and Niihau. Clerke thought it was southwest of Kaula, an islet southwest of Niihau. It wasn't. The nautical charts show no shallow places in that direction.

Dave Nekomoto, executive officer of the Pacific Missile Range Facility on Kauai, flies over the waters off Kauai and Niihau. He said he knows of no shallow reefs or sand bars off Kaula.

Koichi Masaki, a veteran Kauai fisherman, is credited with discovering the only thing close to a shallow off Kaula. It is a rock pinnacle that reaches within 30 feet of the surface, about 6 miles northwest of Kaula.

Masaki said that in all his years of fishing the waters, he located nothing else in the area that would meet the description of Clerke's island.

Victor Lipman, who with turtle expert George Balazs studied the issue for a 1983 article in "Honolulu" magazine, came up with Masaki's pinnacle as the only likely answer.

Kauai diver Sam Lee, who calls it Five Fathom Shoal, said it is shaped like an ice cream cone, with the top flat and the sides dropping steeply to the black depths below. And that flat top is not much bigger than a floor in a good-sized office building, Lee said.

Could the "island" have simply been a sunken reef? Would Hawaiians have collected turtles feeding and resting at such a spot?

Balazs, who studies sea turtles for the U.S. Fish and Wildlife Service, said he visited the spot and finds it unlikely.

Balazs said he received one report that pre-Cook Hawaiians might have built a platform, hauled it out there and anchored it to the pinnacle to collect turtles.

"At first it sounded absolutely ludicrous," he said, but he considered it. Balazs said he concluded no such platform could have survived in those open ocean conditions long enough to become a regular turtle collection spot.

A man familiar with Hawaiian folklore said there were traditions in Hawaii of ghost islands, "certain legendary islands that were supposed to pop up and disappear." But that would not account for a spot so firm that you'd go looking for turtle there.

Another theory is that the sandy island named is actually one of the low islands of the Northwestern Hawaiian Islands. The next two islands beyond the Kauai-Niihau group are rocky Nihoa and Necker, but beyond them extends the chain of sandbars and shoals, beginning with French Frigate Shoals.

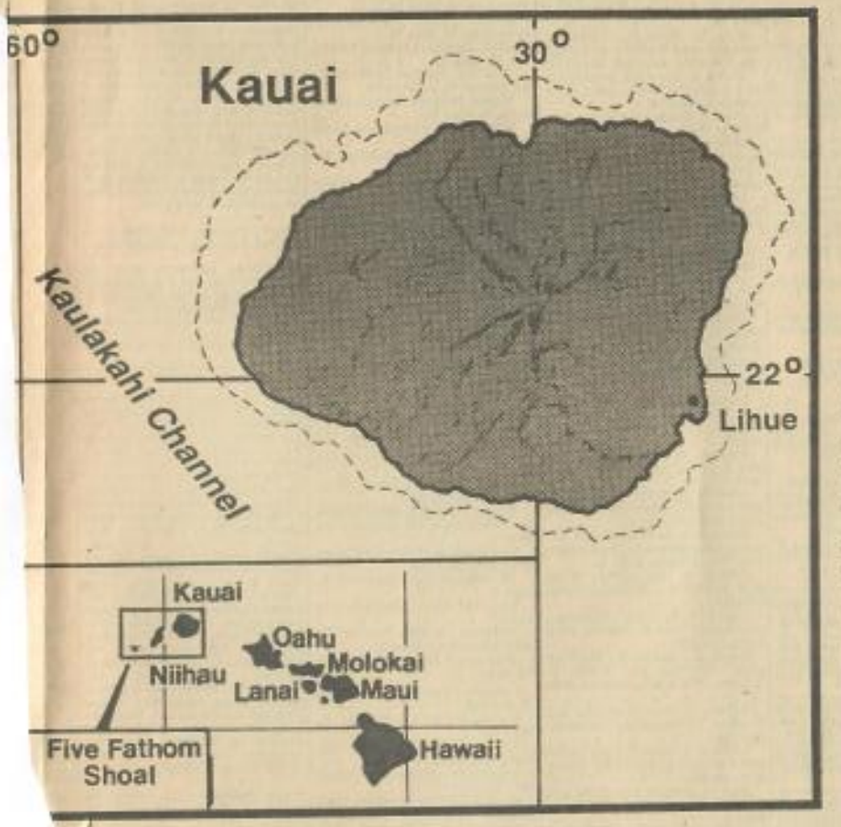
However, a Kauai canoe on a short fishing trip would not be going hundreds of miles across open ocean for turtles. There were enough turtles around the main islands.

There is also the possibility the island referred to was one of the many small islands and rocks off Niihau. One fisherman suggested Kuakamoku, a rock off the southwestern coast of Niihau, could once have supported a sand bar. It does not today.

Finally, there is the likelihood that the Europeans on Cook's ships simply misunderstood their informants.

One meaning of Moku pap could be flat island, but Samuel H. Elbert, co-author of "Place Names of Hawaii," said th

mysterious disappearing isle



Map shows the location of an area known as Five Fathom Shoal. Kauai diver Sam Lee said it is shaped like an ice cream cone, with the top flat and the sides dropping steeply to the black depths below. While the area may be the mysterious "missing island," others say there is no evidence it could have been at the surface or supported a sandy area as little as 200 years ago.

Advertiser newsmap

words could mean many other things.

"Moku and papa are both pretty common words," he said. Moku can be an island, a district, a severed portion of something, he said. Papa can refer to a native offspring, things growing thickly together, a kind of lava, a part of a fishing net or a wind of a specific area, he said.

"Moku papa can just mean a rock," he said.

The word papa'u can mean a sand bar or a shallow place.

The Hawaiians in the canoe Clerke saw could have been saying they were going to an islet or reef where turtles gathered, rather than giving the specific name of the place.

There are enough small islands off the coasts of Kauai and Niihau to meet the rough description. It is quite likely the Hawaiians were referring to an island or islands that did and still do exist. We just don't know which.

Or maybe there was a disappearing island, which has remained invisible all these years.

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United States on a routine rotation flight.

It carried a crew of 10 and 6 military passengers.

Fifty miles out the pilot radioed that the plane had developed engine trouble and he was turning back. It made one approach to the field but did not land. On the second ap-

fourth typhoon across the Pacific. Crew names were not announced.

The B-29 destroyed 8 houses and damaged 6 as it ripped through the Air Force housing area. The Air Force estimated damage at $150,000.

The crash occurred at 6:48 a.m. while most Air Force personnel and their families were asleep.

OPERATION BARRACUDA—"Elimination fishing" is being conducted on a systematic scale at Liliuokalani park to eradicate fish-eating barracuda from the park's pools. It's not that anyone cares about barracuda eating other fish, but that park authorities are pushing the program to protect valuable black swans, gifts of Mrs. Laura Kennedy, which soon are to grace the ornamental pools, it is explained by Yoshio Yanagawa, chairman of "Operation Barracuda". Pictured above is an 18-pound barracuda caught this morning, held by Parks Superintendent Raymond J. Carvalho, flanked by left, Parkkeeper Tom Mizuno and, right, Mr. Yanagawa and, kneeling, left, Parkkeeper Takeo Hamamoto and, right, Parkkeeper Matsuichi Sugimoto. Tribune-Herald Scan-A-Graver.

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"Ten Little Indians" pr
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Players wound up dress
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Tickets are on sale at
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TRIBUNE HERALD

12/16/53 Honolulu Advertiser A:1

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This wording okay in photo

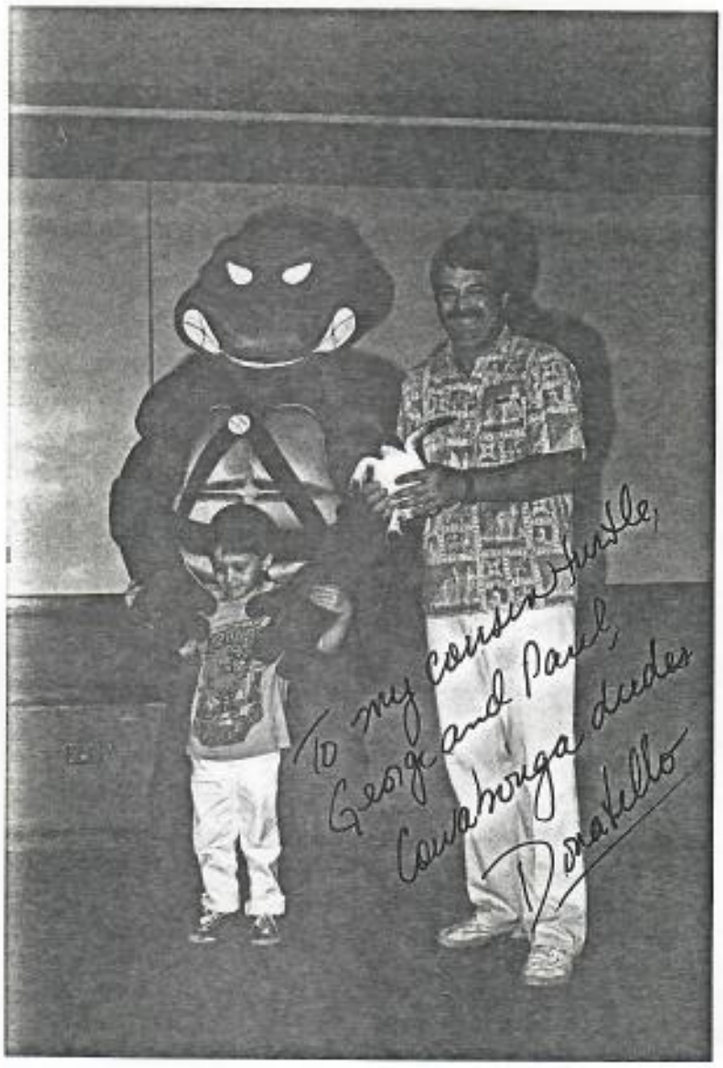
New Hilo Gov't 'Employes'

NEW COUNTY WORKERS—The first of many sea turtles went to work for the County of Hawaii this week in an effort to clear vegetable matter lining the bottom and sides of ponds at Hilo's Japanese Park. Realizing turtle steaks are a prized delicacy, park officials painted a warning on the shells to ward off raiders. Shown launching the career of the new employees (on pay but all you can eat) are Yoshio Yamazawa, chairman of the Parks Commission; Mrs. C. [illegible] Kennedy, a member of the commission; Raymond Carvalho, parks superintendent, and T. E. Sides, landscape expert who has aided in the rehabilitation of the park. (Hilo Photo Supply)

Board Defers Pali Beer Bill:

Rep. Judd Warns Against Reds

US Can Win Asian


To my cousin Shuttle,
George and Paul,
Cowabunga dudes
Donatello

STAR-BULL. 6/27/89

Star-Bulletin

Tuesday, June 27, 1989 □ A-5

This X-ray by veterinarian Bob Morris of Makai Animal Clinic shows the fishhook that was lodged in the throat of the young green sea turtle, which also was suffering from a man-made puncture wound. The view is from the bottom looking up.

Sea turtle had rusty hook in its throat

Star-Bulletin staff

A juvenile green sea turtle found June 18 suffering from a spear wound had a double dose of trouble resulting from humans.

Besides the puncture, believed to have paralyzed the turtle's front flippers, it had a fishhook deep in its throat.

"The fishhook didn't have a thing to do with the puncture hole. They are two different things," said George Balazs, a National Marine Fisheries biologist and a turtle expert.

"Certainly, the fishhook wasn't doing the turtle any good," he said. "Whether it was involved with the turtle's continuing weakness is really unknown."

The turtle was found at Sunset Beach unable to move its front flippers, apparently because of nerve damage from the spear wound.

Bob Morris, Makai Animal Clinic veterinarian who assists the fisheries service, took X-rays of the turtle last week to see what the spear wound had done, Balazs said.

Nothing was detected relating to the wound, he said. "But lo and behold, down in the turtle's throat was a fishhook."

He said Morris was able to go way down in the turtle's throat and remove the hook with a forceps. "It is a pretty corroded fishhook. It had been in there awhile."

The hook may have caused some bacterial infection, Balazs said.

The turtle is being treated with antibiotics and monitored at the service's Kewalo laboratory.

It wasn't expected to survive long after it was turned over to the service, and it is still very weak, Balazs said.

"It's no worse and no better, except the fishhook, about 1-inch or 1¼-inch long, deep in its throat, has been taken out."

Turtles are an endangered species protected under state and federal laws; violators are subject to fines and imprisonment.

Star Bulletin 3/9/56 p 14

Territory Hopes to Expand Marine Turtle Population

Marine turtles, though not one of the most popular edible sea animals in the Islands, are a valuable and puzzling element of Territorial fauna.

The turtle supply is not , but the potentiality is , according to Vernon E. Brock director of the Fish and Game Division.

Paul L. Breese director of the Honolulu Zoo recommends an investigation of this marine reptile through banding.

But the slow moving sea animal thwarted previous attempts of Mr. Brock to trace its growth.

He made two trips to the Leeward Islands between Midway and Niihau where the turtles breed and from where they migrate tothese Islands.

He said on his second trip in 1951, he found one of the animals he had banded in 1951 only 20 feet from the spot where he originally had found it.

Information is needed on these turtles so that they might be protected and perpetuated.

With perpetuation at their breeding places it is believed turtle populations might be expanded to accommodate a small fishery here.

WILLIAM F. QUINN
Governor

COPY

ADMINISTRATION
FORESTRY
PARKS

ENTOMOLOGY AND MARKETING
ANIMAL INDUSTRY
FISH AND GAME

TERRITORY OF HAWAII
BOARD OF COMMISSIONERS OF AGRICULTURE AND FORESTRY

C. ERIC REPPUN, President
RICHARD H. TOYOSHIBA, Executive Secretary

Division of Fish & Game
VERNON E. BROCK, Director

HONOLULU 14, HAWAII
October 29, 1957.

Mr. Tom Harrisson,
Curator and Government Ethnologist,
Sarawak Museum,
Sarawak, Borneo.

Dear Mr. Harrisson,

I wish to acknowledge receipt of your reprints concerning turtle banding.

In 1950 I tagged some 30 or 40 turtles in the leeward chain of the Hawaiian group, that is between French Frigate and Pearl and Hermes Reef. In 1951 I visited the same area and caught a number of the turtles which I have marked the previous year sunning themselves on the beach in practically the same locations where they had been taken for banding. There has not been any recovery of these marked turtles since; but as the leeward island area is a lonely isolated region with a few visitors, this is not surprising. As far as I know there is no turtle nesting in the main s island of the Hawaiian group; yet; we do have a turtle fishery which is not of any great volume and which does not show any evidence of operating on a declining population of turtle. The supposition is that the leeward islands constitute the nesting area but this has not yet been proven.

Your data indicating that these animals nest only every other year is certainly incresting and is worth in light of our situation.

Sincerely yours,

(Sgd.) VERNON E. BROCK, Director
Division of Fish and Game.

Hawaii's WILDLIFE Heritage

In this edition, NEWS4's Gary Sprinkle takes a closer look at Hawaii's shrinking wetlands, the resurgence of the Green Sea Turtle, and our endangered forest songbirds. Please join us for, *"Surviving the Wild"*.

FRIDAY 7PM

Island Television KITV4 hawaii

Sponsored By: The Fuel Oil Polishing Company, PRI Inc., Finance Factors, 7-Eleven Hawaii, Texaco, The Estate of James Campbell.

Dive firm aids U.S. research on sea turtles

Atlantis Reef Divers and the National Marine Fisheries Service have joined forces to conduct sea turtle research off Waikiki Beach.

The project aims to promote the long-term conservation and recovery of the sea turtles, listed as an endangered species by the United States, off Waikiki.

About once a week, a team of marine turtle researchers boards an Atlantis Reef Divers charter to study the turtles' habitats and daily activities. The team is working to determine the number of turtles in the area. To date 19 turtles have been spotted and tagged.

George Balazs, of the Marine Turtle Research Program of the National Marine Fisheries Service, measures a turtle off Waikiki as part of a cooperative program with Atlantis Reef Divers.

Photo courtesy of Atlantis

Maritime Center hosting lecture series

The Hawaii Maritime Center will host a six-part lecture series "Hawaii's Maritime Heritage" beginning Thursday.

The series will run 7 p.m. to 8:30 p.m. Thursdays at the Maritime Center's Pacific room.

The lectures are as follows:

- June 25 – "Polynesian Voyaging" with Gordon Piianaia.
- July 2 – "Days of Sail" with Dorian Travers.
- July 9 – "Whaling in Hawaii" with MacKinnon Simpson.
- July 16 – "Inter-island Steam Shipping" with Bob Krauss.
- July 23 – "Honolulu Harbor History" with Capt. James Kleinschmidt.
- July 30 – "Honolulu Harbor Today and Tomorrow" with John Craven.

The cost is $35 for the general public and $25 for Hawaii Maritime Center members.

The Maritime Center is located at Pier 7, with free parking available at the adjacent Pier 6. For information call 523-6151.

Gorge - Here you are! What did you think of the Ala video? NBF

Divers Join Sea Turtle Researchers on Day Trips

The staff of the Atlantis Reef Divers' has joined forces with the National Marine Fisheries Service to conduct extensive sea turtle research off the coast of world-famous Waikiki Beach in Honolulu, Hawaii.

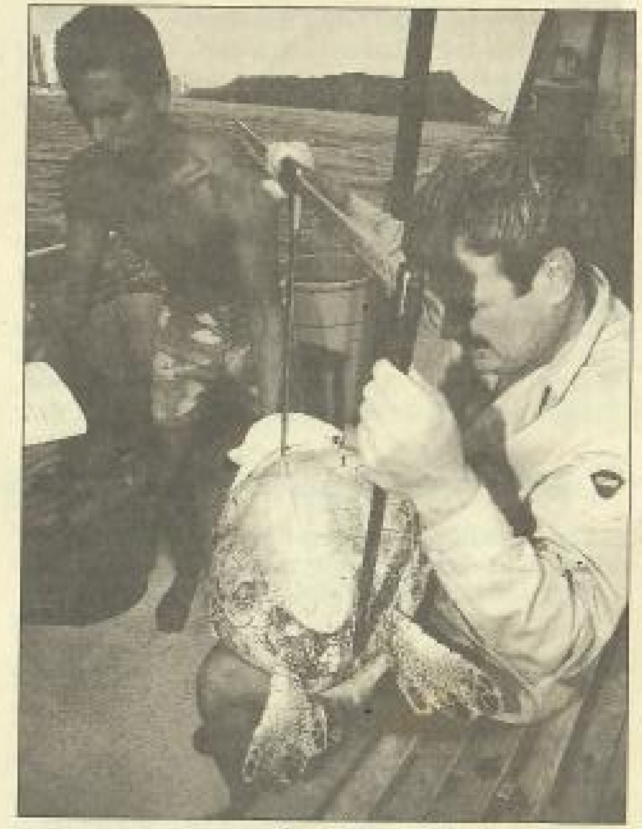
Atlantis Reef Divers offers logistical support for the undertaking, which is being conducted by George Balazs, a zoologist and leader of the Marine Turtle Research Program. The turtles are listed by the United States as an endangered species, and the overall objective of the project is to promote the long-term conservation and recovery of sea turtles in the Waikiki region. To date, 19 turtles have been spotted and tagged by the researchers.

About once a week Balazs and his crew board one of Atlantis Reef Divers' charters. Aboard the *Explorer*, Atlantis' 60-foot dive vessel, the team studies various habitats used by the sea turtles. In addition, they are determining the approximate number of sea turtles in the area and studying the animals' daily activities such as foraging, nesting and grooming.

For those aboard the turtle-tagging charters, the diving tour also includes the experience of watching a scientific research team in action.

All those participating in Atlantis' certified-diver tours visit Atlantis Reef. This collection of underwater structures, found approximately one mile off Waikiki Beach, includes *YO-257*, a 174-foot World War II U.S. Navy tanker; two airliners and other fish-attracting manmade reefs. Divers also will find an abundance of brilliantly colored Hawaiian fish and, of course, friendly sea turtles are often seen throughout the adventure.

An additional feature of the reef is that it is visited by two 80-ton, battery-operated Atlantis



Atlantis Submarine/Christopher Abrahm Photo

Researcher — George Balazs, zoologist and leader of the Marine Turtle Research Program, measures and tags a sea turtle.

submarines that operate out of Hilton Hawaiian Village. Many divers enjoy entertaining the 46 passengers aboard each of the 65-foot vessels that pass by the reef by emerging from the sunken tanker's smoke stack or waving from the cockpit of one of the submerged airplanes.

For more information on Atlantis Reef Divers, call toll-free: (800) 554-6267.

Lana'i Times

Volume 4, Issue 9

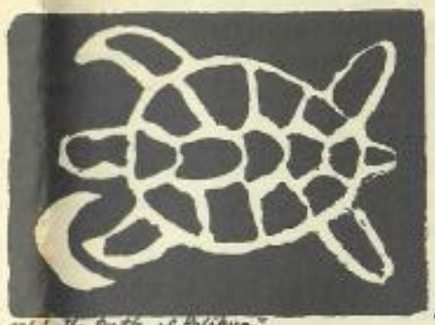
September 15, 1992

"O Ka Honu O Polihua"

An ancient Hawaiian chant describes the fire goddess Pele feasting on the turtles of Polihua and provides a clue to the natural history of endangered green turtles in Hawaiian waters. In fact, according to George H. Balazas, Zoologist with the National Marine Fisheries Service, "the only site in the Hawaiian Islands with a well-documented history of nesting sea turtles is Polihua, a mile long white sand beach on the northern shore of Lana'i."

By combining the mythic traditions as well as more modern accounts, Dr. Balazas has pieced together a fascinating story of the famous turtles of Polihua, which has been published in "Elepaio", the journal of the Hawaii Audubon Society. The following information is taken from that article, which Dr. Balazas has kindly sent to The Lana'i Times.

To begin with, the very name, Polihua, translated as "eggs in bosom" is the only Hawaiian location where the place name is descriptive of eggs on a beach. "The available information suggests that Polihua was an important breeding site for the Hawaiian Green turtle...until the late 1800's or early 1900's....In view of the protected status of sea turtles under the U.S. Endangered Species Act, a synthesis of historical information about Polihua...may be helpful to the recovery of the Hawaiian stock." For example", Balazas suggests, "Polihua could prove to be one of the best places in Hawaii to do experimental restocking of green turtles aimed at re-establishing a nesting colony."



"Linoleum cut by Joana Varawa"

Hawaiian Legends

A very old story about the fishing god, Aiai, tells that he traveled around the Hawaiian islands establishing fishing shrines (koa), many of which still stand at favored fishing places. " At Kaena he marks a stone which turns into a turtle and this explains how turtles came to Hawaiian waters and why they come to the beach to lay their eggs, and this is the reason for the name Polihua ." (Ruth Beckwith, Hawaiian Mythology)

Ruth Tabra, in her book on Lana'i, recounts the Pele chant — "Ua ono o Pele i kana i'ia o ka honu o Polihua" — and translates it as "Delighted, Pele feasts on flesh of turtles from Egg-nest Cape."

Mary Pukui translates an old Hawaiian proverb "Na honu ne'e o Polihua" as "The moving turtles of Polihua".

And Kenneth Emory, who conducted archeological investigations during the

continue on page 6 Turtles

Lana'i Times • PO Box 650 • Lana'i, Hawaii 96763

Address Correction Requested

MANELE ROAD TO BE REPAVED

Repaving of the Manele Road will begin on Monday September 21st and continue on workdays to Friday, November 16. During that time the public can expect short delays although there will always be one lane kept open. Work will be done by the paving contractor, Hawaiian Bitumuls, with material supplied by Lana'i Rock and Concrete. So schedule your trips down and up the hill accordingly and don't cut it to the minute if you expect to get to work on time or catch the Expeditions ferry.

continue from page 1 Turtles

1920's and talked to some of the old Hawaiian residents, translates Poli-hua as "nest egg (descriptive). Beach. A place famous for sea turtles."

Emory also described two archeological sites on the east side of Polihua Valley which he believed might be fishing shrines (koa). Near Polihua is the great heiau (ancient temple) at Kaena -iki, the largest religious structure on Lana'i. It is nameless now, the once living ceremonies forgotten, but it might be linked to the ancient fishing culture of the island.

Exploitation

With the abolishment of the kapu system in 1819, the historic controls on natural resources were destroyed. Turtle flesh, which was once probably reserved for chiefs and ceremonial occasions became food for anyone. Nesting turtles were particularly vulnerable because they had to come to the beaches to lay their eggs and were easily hunted and killed.

Kahaulelio, a Hawaiian writing a series of newspaper articles in 1902, described the turtles of Polihua and the method of catching them. "Polihua at Lana'i was a very famous place for turtle catching. The natives catch them on the sand shore if they need meat. Strangers do too, when they want to visit and see for themselves and if they wanted some to eat. It was a good thing to see this famous fish of the birthplace of my beloved mother....This was the fish that Pahulu asked the gods not to allow it to have any irritation in its flipper or tail...Yes, when you go to Polihua to catch turtles, you need all your strength."

Charles Gay wrote that in the early 1900's "turtles laid their eggs in the sand above the high water mark (at Polihua). I have seen turtles that weighed in excess of five hundred pounds on this beach and were capable of carrying three medium sized persons."

That the turtles of Polihua were green turtles seems to be confirmed by the chant and the proverb which names the turtle as "honu"...the green turtle, as opposed to "honu'ea"...the hawksbill. In addition, the large size of the turtles mentioned by Gay and Kahaulelio is consistent with the known size of the of the adult green turtle, but not the hawksbill, which is smaller. Further confirmation is provided by the fact that the turtles were taken for food as the hawksbill was considered poisonous and not eaten.

Current Information

Dr. Balazas has accumulated a great deal of more recent information about the turtles of Polihua from interviews and correspondence. He notes that "a stone image of a "turtle god" is reported to be at Polihua...there are also reports of a turtle petroglyph located at Polihua.

Two people remembered catching turtles at Polihua during the 1920's. "The sharp decline in nesting during subsequent years has been attributed to the construction of roads, increase in traffic to the north shore, and easier access for taking turtles on the beach.... Other possible adverse factors to nesting...include changes in coastal vegetation and heavy erosion at higher elevations."

However there have been reports of attempted nesting at Polihua during later years: in 1954 a nest was reportedly seen; in 1968 a turtle was seen "up on a northshore beach"; in 1971 a turtle was seen at the water's edge; in November, 1977, two large green turtles were seen mating off the northeastern shore; in July, 1981 two very large turtles were seen "20-30 yards up the beach"; in the spring of 1983 a large turtle was seen in the early morning returning to the water; and in August, 1983, a large turtle was seen in the shoreline at Awalua.

During the 1960's and early 1970's green turtles were intensively hunted off Lana'i and Molokai for the restaurants and other commercial markets in Maui. In 1968 a fisherman wrote on his monthly catch report that "This area in 1948-1950 I used to catch at least 100 in 4 to 5 days fishing — for some reason there are no turtles there now." Another fisherman noted that turtles caught in past years off Molokai could be recognized as having been ashore on Lana'i by the tar stains on their undersides.

Another factor in the decline of green turtles might be pollution. In 1978 a fisherman speared a female green turtle who "was found to have large pieces of black and white plastic bags packed throughout its intestines."

The Future

What the future holds for the ancient turtles of Polihua is up to us. Vulnerable on the beaches, the turtles cannot continue if they cannot nest in peace. Dr. Balazas suggests that systematic surveys could ascertain the present status of" ka honu o Polihua", and that the beach could be utilized for experimental restocking.

Perhaps our vision could contain an image of a sanctuary at Polihua where the great beasts could bask and play and bring forth their young undisturbed by hunters or curiosity seekers — a sanctuary in the sun and a glowing tribute to the foresightedness of Lana'i.

the sewage outfall of the new sewage plant, and ultimately, disassemble its own pier at the end of the project. But Mother Nature had a little surprise in store for the crane. The largest surf in 20 years roared through Sandy Beach. Nothing like it had happened since the 1946 tidal wave wiped out the Alan Davis property. As these huge 20-foot sets rolled in, we bodysurfers could only stand on the shore and marvel as some of the most renowned big board surfers of the day rode the waves at our beach. And we marveled as the huge sets smashed into the pier with a violent fury, gradually rolling the large crane along its tracks halfway back to the beach.

But the real tragedy was what happened to the ocean bottom. The combination of the pier installation and removal, plus the huge surf took a terrible toll on Sandy Beach. Many of us feel that the waves never again shaped quite as well as they used to before 1965.

In 1968, modernization. The kiawe tree forest was bulldozed to create the present park, a road was paved, parking areas were created, bathrooms and showers were installed, and lifeguards and their towers were introduced. Sandy Beach *had* a new image. Overnight, the crowds began to multiply. Bodysurfers continued to develop their techniques. We welcomed the canvas surf mattresses, for a while. Requiring considerable water skill just to get one out through a large shorebreak, the mats offered exciting thrill rides but had an average life span of only 60 days before they burst a seam. The Point witnessed the "spoon" evolution of the plywood paipo boards. Eventually, the invention of the Morey Boogie Board pushed both surf mattress and paipo boards into oblivion.

The 1970s brought a tidal wave of new experiences. Live rock concerts in the park behind the bathrooms became a regular feature. Hand boards made their first appearance at both the shorebreak and the Point. And the surf created the first "money" beach. As this unusual swell and its backwash sliced away at the beach, leaving a new sand cliff with each large wave's wash, coins and jewelry were uncovered for the first time in years. Soon we were all finding rings and lots of tarnished coins and other items that had been lost over time at Sandy Beach.

But progress dealt some tough hands to the Sandy Beach area. The Kalama Valley residents were all evicted from their leasehold land so their homes and farms could be turned into subdivisions. "Queen's Beach" almost became a development of hotels. One of our cliff divers broke his ribs on a jump and put a damper on that activity.

Windward Oahu News Sept 1992

Sandy Beach — A Call for Safe Fun

by Bruce Lee, City Lifeguard

After spending most of my "hanabata" days as a Waikiki "Wall Rat," I was finally introduced to the Sandy Beach shorebreak about 30 years ago. My friends and I missed a "few" days of school by cutting class and hitchhiking to Sandy's. None of us had fins, so we quickly learned to bodysurf the hard way. At first it scared me to death, but I gradually became addicted to its power and beauty. I had no idea at that time that I would end up a career lifeguard at Sandy Beach.

There are a lot more sea turtles here today than there used to be since they have become protected, but don't trust the turtles! While bodysurfing at full speed a turtle popped up in front of me like an instant coral head, and almost broke my kneecap. The funniest turtle trick I've seen, was one doing an unplanned aerial after being hit by a backwash.

With the increasing crowds, Sandy Beach has become the most statistically dangerous beach in Hawaii. As a lifeguard at Sandy Beach for the last 20 years, I've lost track of the countless number of rescue incidents performed by the lifeguards for people with broken necks, dislocated shoulders, and all other kinds of related injuries. 95 percent of these victims were inexperienced people — especially tourists. A lifeguard's nightmare is a crowded day with rough surf. Lifeguarding may look stress-free doing nothing all day, but you must be ready to jump when something goes down, as it usually does. Being responsible for the public's life and limb five days a week makes you look forward to those two days off you receive at the end.

With the increasing crowds, Sandy Beach has become the most statistically dangerous beach in Hawaii.

The locals make the surf look easy and fun, and for some reason people who have never even seen an ocean think they can go out and shred. The most important lifeguarding technique of all is prevention, but we cannot reach them all and many just don't listen. All the posted warning signs and verbal warnings have only kept a small percentage of these people out of the water. To compound the problem, these inexperienced people become a danger to the locals as well as to themselves once they are in the water. I personally had a most memorable experience once when a 300-pound woman went over the falls and landed on me, almost breaking my neck. I would like to thank the local public on behalf of the lifeguards for the many times they have helped out.

Sandy is a very special beach, with year-round surf and a variety of breaks including point, reef and shorebreaks. Unfortunately the Sandy Beach of today is not without its problems. There are ripoff artists you need to guard your belongings from. There are also a lot of inconsiderate people who trash the beach and much of their mess blows into the ocean. We all need to "kokua" and pick up our rubbish and make the litterbugs aware of their lack of ALOHA and respect. The crowded surf conditions also create a lot of friction in the water. Drop-in artists and wave hogs who have no spirit of courtesy or sharing need to learn some respect.

When I envision the Sandy Beach of the future I see an ocean full of happy people whose egos, greed and disrespect have long since dissolved in the oneness of the ocean's liquid embrace. I see all the divisions and conflicts resolved through reunion in the

its power and was beached at the Blow Hole end of the beach. In typical fashion, an unforgiving Sandy Beach swell rose up and systematically destroyed the ship until nothing remained but the driveshaft and engine imbedded in the sand, with wooden planks floating everywhere.

A group of young and dedicated bodysurfers stepped forward and banded together in an attempt to further the sport. They decided to hold the first Sandy Beach bodysurfing contest. As a result of that first year, a club was formed. We named it the Halona Point Bodysurfing Association after the predominant point of land in the region. The club has now seen 20 years of bodysurfing contests and 20 years of

Dive firm aids U.S. research on sea turtles

Atlantis Reef Divers and the National Marine Fisheries Service have joined forces to conduct sea turtle research off Waikiki Beach.

The project aims to promote the long-term conservation and recovery of the sea turtles, listed as an endangered species by the United States, off Waikiki.

About once a week, a team of marine turtle researchers boards an Atlantis Reef Divers charter to study the turtles' habitats and daily activities. The team is working to determine the number of turtles in the area. To date 19 turtles have been spotted and tagged.

George Balazs, of the Marine Turtle Research Program of the National Marine Fisheries Service, measures a turtle off Waikiki as part of a cooperative program with Atlantis Reef Divers.

Photo courtesy of Atlantis

ENVIRONMENTAL UPDATE

Helping the turtles of Playa Grande

JAN TENBRUGGENCATE
Advertiser Environment Writer

"Think globally, act locally," is one of the pet phrases of modern environmentalism, and the concept is one that has been in our culture for generations.

Phrases in the same vein: Clean up your own back yard; Don't foul your own nest.

"Think globally, act locally" is a concept that works on the hope that it will create an ethic, and if everyone everywhere follows the ethic, our world environmental woes will be over.

If folks near the jungles protect the jungles, and folks near the oil fields ensure safeguards are adequate, and folks living by the sea preserve sealife, and folks everywhere fight waste and support conservation, well, then, things will be better worldwide.

For some folks, the back yard isn't big enough. And for others, there is a recognition that without help, someone somewhere else won't be able to fight the forces of environmental degradation.

When Hawaii residents Laura Sasaki and Roz Rapozo went on vacation to Costa Rica in May, they figured on taking it easy. Eight days later, they had a cause: the leatherback turtles of Playa Grande.

Local residents took them to the beach, and told them that the leatherbacks, the biggest of sea turtles, came back to this beach annually to nest. But others were developing an interest in Playa Grande, too.

"We found out about the plans for developing resorts and luxury housing there which seemed inconsistent with its importance as a nesting beach. We returned from Costa Rica determined to make sure that Playa Grande got the attention it needed to be preserved," Rapozo said.

Attention, she and Sasaki decide, could best be attracted with pictures. They resolved to try to find a way to develop a video documentary of the leatherback and Playa Grande story.

Sasaki, a Honolulu attorney, and Rapozo, who has a travel agency, wrote letters and made calls, and the project came together.

Mario Boza, Costa Rican vice minister of natural resources, wants Playa Grande to be a national park, and backed their efforts. So did Maria Teresa Koberg, director of Boza's Sea Turtle Rescue program, who offered her San Jose apartment.

The Honolulu-based environmental group Earthtrust stepped in with backing.

Hawaii turtle researcher George Balazs, of the National Marine Fisheries Service, said there is little known to science about the role of Playa Grande in leatherback turtle life, but he said the beach "is reported to be one of the most important nesting beaches for the leatherback turtle in the world."

Hawaii's most common sea turtle is the green sea turtle, but leatherbacks swim these waters as well. They are graceful swimmers and can grow into huge animals, substantially larger than the green sea turtles.

The folks who want a national park at Playa Grande — it would be called Las Baulas De Guanacaste — hope the video will draw both attention and dollars. The country doesn't have the money to buy up the beachfront for preservation, and supporters will seek that money from donors.

Rapozo and Sasaki are also looking for donors. They figure the video will cost about $69,000. Contributions can be made to Earthtrust, with a notation that they are for the turtle documentary. Send them to The Honu Project, 3615 Harding Ave, Suite 409, Honolulu HI 96816.

Rapozo and Sasaki named their effort The Honu Project, taking the Hawaiian name for turtle.

The leatherbacks nest in the winter, mainly right about now. So with no guarantee there will be enough money to pay for the project, they left for Costa Rica the day after Christmas.

"We are doing our documentary, as we call it, Spike Lee style, with credit cards and out of our own pocket for the most part," Rapozo said.

The crew includes director Terrance Morin and cameramen Sean Hayes and Richard Nyren. Photojournalist Allan Seiden will participate.

Leeward Community College television production instructor Robert Hochstein is consultant to the group. So is Florida Audubon Society biologist Peter Pritchard, who serves as national sea turtle adviser to Costa Rica. Other advisors include Torsten Ringberg, a Dane who is fighting to preserve a Costa Rica rainforest and computer scientist and biologist John Lindelow, who serves as production manager.

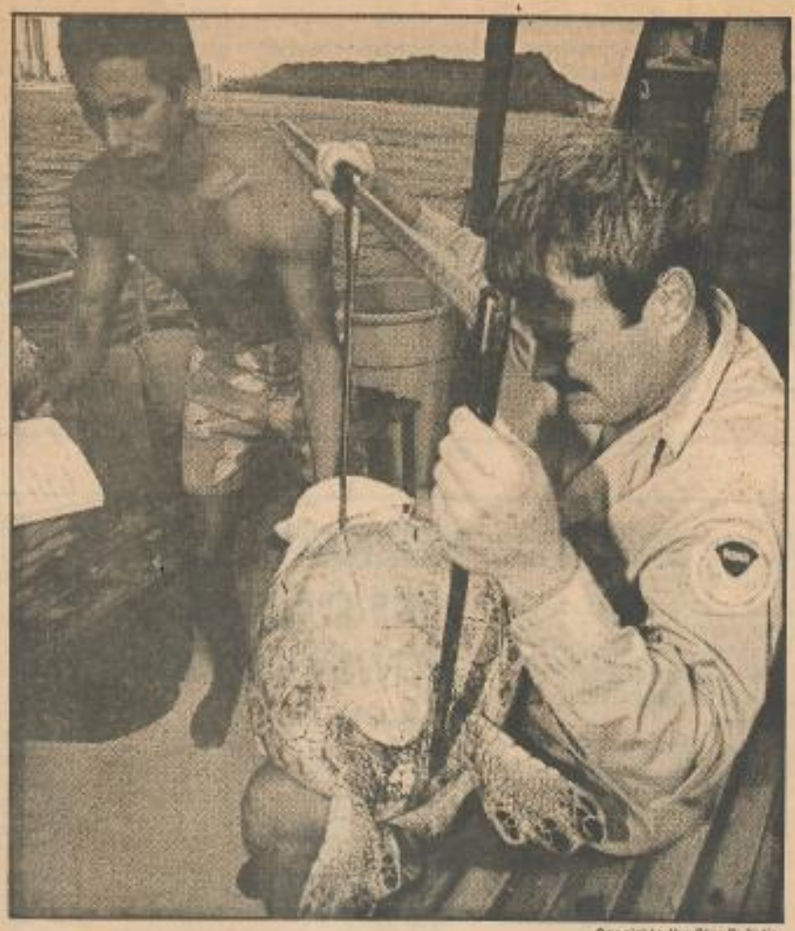
Windham Hill recording artist Scott Cossu has agreed to write an original sound track for the film.

The Honu Project team is scheduled back in Hawaii this week.

For Roz Rapozo, while Costa Rica is a fair distance away, there's a local feel about it.

"Costa Rica is incredibly beautiful. It reminds me of Hawaii 30 years ago. It has so much diversity, it was only a matter of time before the growing population of the world would discover it," she said.

"Just as I have watched Hawaii grow and develop, I can see the inevitable wave of progress that is beginning to wash over its pristine shores," Rapozo said.



Special to the Star-Bulletin

Zoologist George Balazs measures a sea turtle caught off Waikiki.

Turtles studied off Waikiki

☐ A diving firm and a U.S. agency team up

Star-Bulletin staff

Atlantis Reef Divers and the National Marine Fisheries Service have joined forces to study sea turtles off Waikiki.

The divers are providing transportation and other support for the study led by George Balazs, a zoologist and leader of the Fisheries Service's Marine Turtle Research Program.

Scientists want to help the endangered sea turtles to survive and proliferate in the area.

As part of the research, scientists and divers board Atlantis Submarines' 60-foot dive vessel, Explorer, each week to study and count turtles in their natural habitat.

HAWAII A3

Saturday, July 4, 1992 ■ Star-Bulletin

MAUI NEWS - March 8, 1992

Turtle found beached dies

KAHULUI — A large green sea turtle found on Baldwin Beach with tumors on its body died Friday morning, a state aquatic biologist said.

Skippy Hau of the Department of Land & Natural Resources said the 150-pound turtle was dead when he arrived for work Friday morning.

The weakened marine reptile was found on the beach covered with the fibropapilloma tumors that have plagued green sea turtles in Hawaii and other regions around the world in recent years.

Rare turtle discovered at Maalaea

South Maui Times 3/5/92

by Jerome Kaiser

The rare and exotic Hawksbill turtle was discovered in Maalaea last year, the first time the critically endangered species has ever been found on Maui.

Last summer, Mary Valley was walking the beach along Maalaea when her two-year-old daughter Cianna, who was riding on Valley's shoulders, spotted three half-dollar-sized sea turtle hatchlings on the sand.

"They were just three little baby turtles trying to get into the water, and then the waves would wash them back up," Cianna recalled. "So we stayed there and made sure they got into the water."

She reported the sighting to Brooks Tamaye of the Department of Land and Natural Resources, Division of Aquatic Resources (DLNR, DAR), who confirmed the nest site, and

See TURTLE on p.8

Rare Hawksbill sea turtle discovered at Maalaea

TURTLE from page 1

consulted with turtle specialist George Balazs on Oahu. The two agreed that the nest should be excavated, before humans or animals (especially dogs or mongoose) might disturb the site.

Later, Tamaye and two other DAR staffers dug into the nest site, recovering 11 live hatchlings which were successfully released. Another nine hatchlings were found out of their shells, but dead; eight others had died while emerging out of their shells. In all 181 eggs had been deposited, of which 64 apparently hatched successfully.

"I couldn't believe it," said Valley of their discovery, adding she had seen a number of turtles here before on boats or snorkeling, but never hatchlings.

Turtle specialist Balazs, who works for the National Marine Fisheries Service on Oahu, was sent specimens and confirmed them as Hawksbill turtles, the first ever discovered on Maui.

He said the Hawksbill is a "critically endangered species," and mostly nests in Hawaii on the east end of the Big Island, and some on the east end of Molokai.

He explained that the Hawksbills' exotic shell markings and the thickness of its shell has been its downfall, as it is prized in Japan and other Asian countries as tortoise-shell. Items like beautiful hair-combs that sell for as much as $800 to $1,000 were fashioned in Japan from the Hawksbill shells.

He said Japan recently had agreed to give up trading in tortoise-shell, and Balazs himself was traveling to Japan this week to take part in a symposium to discuss what that country might do to learn of the turtles' biology.

Adding to the turtles' exotic appearance are serrated edges along the side and back of the shell, which are very pronounced on juveniles, and less so on adults.

Balazs said he did not think it was likely that we would see great numbers of Hawksbill nesting here in our lifetime, but he said that he, like the Valleys, was delighted and surprised by the discovery of the nest.

He said it was unfortunate that there appeared to be only one nest, as turtles will almost never lay a single clutch of eggs, and usually lay two or three.

Sea turtles' usual nesting cycle is two years or more, Balazs said, so it is unlikely that the same turtle which laid the eggs would return this summer.

Balazs, who is the foremost authority of sea turtles in Hawaii, said he was becoming more and more an advocate of what he called "see turtles," the role the sea creatures play in thrilling and delighting tourists and others here.

"I'm all for it. It's a non-consumptive use of the the turtles, so they're there for the next people," he said. Mary Valley and her sharp-eyed daughter Cianna agree.

"It was wonderful," Valley said of their close encounter with the exotic hatchlings, "we were really excited. Cianna still talks about it all the time."

Junkers-for-cash working

The county reports that 130 vehicles have been turned in as a result of its Vehicle Buy-Back Program in the past 2-1/2 months.

At $50 a-vehicle, citizens have collected $6,500, reports Finance Director Travis Thompson.

The county would like to remind anyone who plans to turn in a vehicle that they must be the registered owner and must provide identification.

The Vehicle Buy-Back Program is a pilot project which was initiated this past January in an effort to curb the number of vehicles being abandoned along the roads, gulches and beaches.

Turtles find happy home in Hyatt lagoon

With the efficiency of movement that comes from long practice, George Balazs of the National Marine Fisheries Service recently caught, removed and tagged four of the green sea turtles that have taken up residency in the Hyatt Regency Waikoloa's lagoon.

The turtles, which are members of a threatened species, were removed from the lagoon, weighed, measured and examined for any physical defects or abnormalities before being released.

Balazs explained that the examination and tagging "... allows the National Marine Fisheries Service an increased knowledge of this threatened species and the ability to record each individual's progress for years to come."

Seeking food and protection, the turtles can be seen around the base of the waterfall feeding constantly on the clumps of algae that come over the falls and grow on the rocks and ledges of the lagoon. With estimated ages of between 3 and 15 years, the smallest of the four weighed in at 22 pounds and the largest topped the 110-pound capacity of the scale.

Linda Elliott, Hyatt Regency Waikoloa's wildlife director, estimates that there are about six turtles in the resort's lagoon.

"It is difficult to know exactly why these turtles decided to make our lagoon their home," she said.

"We can only assume that the lagoon naturally affords them adequate protection from potential predators and plenty of food. We are very pleased to have these wonderful animals as our guests and consider the responsibility of ensuring their continued health and safety a privilege. I am delighted to report that George Balazs's initial findings show that each of the four he examined is thriving."

The National Marine Fisheries Service will continue to monitor the turtles on an ongoing basis. For more information, contact Balazs at the National Marine Fisheries Service at 943-1240 or Elliott at the Hyatt Regency Waikoloa at 885-1234, ext. 1290.

A SAFE HOME — As part of the National Marine Fisheries Service's efforts to better understand threatened species, green sea turtles that have made their home in the Hyatt Regency Waikol lagoon have been examined and tagged. Here, Linda Elliott of the Hyatt and George Balazs, Nati Marine Fisheries Service zoologist and leader of marine turtle research, prepare to return one of threatened animals to the lagoon.

WS

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Students help tag sea turtles

Twenty-seven students from the Hawaii Preparatory Academy captured and tagged 62 green sea turtles at Kiholo Bay recently. The program is part of a project being carried out in cooperation with George Balazs of the National Marine Fisheries Service in Honolulu. The green sea turtle is a protected species under the U.S. Endangered Species Act.

Students reported that the turtles ranged in weight from 18 to 98 pounds and appeared in healthy condition with no signs of the fibropapilloma disease that has seriously afflicted other segments of the green sea turtle population elsewhere in Hawaii.

One of the turtles was a hawksbill, also a protected species, the first to be recaptured at Kiholo. The recapture is expected to help researchers gain information about the growth rates of the hawksbill in Hawaii. It also indicates that the hawksbill is using Kiholo Bay as its long-term home.

As part of the Kiholo project, the students performed scientific procedures on the sea turtles under Balazs' supervision. These included taking measurements, tagging, weighing the turtles, and checking the mouth for signs of disease. The information was recorded for further study by the National Marine Fisheries Service. Some students also use the information in class projects.

From the ongoing project, it is becoming more apparent that Kiholo Bay and its attendant lagoon is an important and perhaps the sole habitat for a population of 200-plus green sea turtles and a small number of hawksbill turtles. To better inform the public of the presence of these two species of sea turtles, signs have been placed in the area stating that they are protected under federal and state law.

ents honored

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Green sea turtles benefit from built-in compasses

2/24/92 HSB A2

OCEAN WATCH

By Susan Scott

I once had the memorable experience of watching a nest of green sea turtles hatch.

Several of us sat on a beach in the middle of the night on a tiny island in the Hawaiian Islands National Wildlife Refuge.

We waited quietly in the dark, then every 10 minutes or so someone would shine a light on the nest, a depressed circle in the sand.

Sometimes the circle quivered with the activity below. By wiggling and squirming, turtle hatchlings transfer sand from the roof of their nest to the floor.

In this way, the nest gradually rises until finally, most of the turtles reach the top. The lead turtle then bursts from the ground and runs toward the brightest light (the ocean in natural conditions) followed by dozens of brothers and sisters.

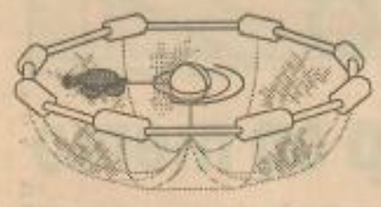
Around 3 a.m., our sand circle finally erupted, spewing out baby turtles right and left.

And the race was on.

We were as excited as the turtles as we followed them down the beach and watched them plow headfirst into the breaking waves.

As I watched those turtles disappear, I wondered how on earth they knew where they were going. And how would they ever find their way back to this beach 30 or 40 years from now when it was their turn to reproduce?

Last week, I read about a study that addressed these questions, and I learned some interesting theories about turtle hatchling navigation.



To study turtle navigation, researchers harnessed hatchlings to a rotating buoy. The net around the buoy protects the turtles from fish.

Researchers believe that each sea turtle has an internal compass that enables it to sense the Earth's magnetic fields.

When Florida hatchlings were allowed to swim in total darkness in a laboratory, they nearly always headed northeast. This direction would normally aim them into currents that carry the turtles through their usual migratory paths.

When the magnetic field was reversed, however, the hatchlings turned around and headed southwest.

Now this isn't earth-shaking news because researchers already know that other animals such as whales, salmon and some migratory birds have compass senses. But one day, during some open-ocean studies with these same Florida hatchlings, workers discovered a curious exception to the magnetic theory.

The wind was blowing from an unusual direction that day, 180 degrees from normal. That made the waves head out to sea, instead of toward the beach.

When released from an offshore boat, the hatchlings consistently swam into the waves, even though this direction would lead them back to shore. Because of this, these scientists now believe that hatchlings also get major direction clues from waves.

This makes sense because when swells from any wind direction get near shallow water, they break and roll ashore. Swimming into the waves would usually take a hatchling away from land.

Knowing how sea turtles navigate is important in saving sea turtles from extinction. With this knowledge, people can release lab-reared turtles under conditions that provide the best chances for survival.

Or perhaps, one day, scientists can trick female turtles into returning only to protected beaches to lay their eggs.

Susan Scott is a marine science writer and author of Oceanwatcher, a guide to Hawaii's marine animals. Her Oceanwatch column appears Monday in the Star-Bulletin.

U.S. fisheries budget ax may cost Hawaii millions

By Ken Miller
Gannett News Service

WASHINGTON — Millions of dollars of fisheries programs that benefit Hawaii would be killed or drastically curtailed under the U.S. Department of Commerce's proposed 1993 budget, officials said yesterday.

The department's National Oceanic and Atmospheric Administration is calling the $1.7 billion budget a new approach to fisheries.

Agency officials said they are as committed as ever to the country's struggling fisheries and endangered marine life. But they said they now want to emphasize the big picture over individual species.

For Hawaii, that means some pet programs are now up in the air, depending on whether Congress rewrites the budget to restore them.

If approved, the budget would eliminate these programs from the National Marine Fisheries Service:

- $150,000 for a Hawaii humpback marine sanctuary institute.
- $550,000 for studies on Hawaiian monk seals.
- $1.5 million for studies on a stellar sea lion recovery plan.
- $250,000 for Hawaiian sea turtles studies.
- $300,000 for a lobster research program.
- $750,000 for the Hawaii fisheries stock management plan.
- $150,000 for the Center for Shark Research.
- $750,000 to study dolphin-safe fishing technology.
- $150,000 to study recyclable fishing nets.
- $1.7 million Pacific tuna-management program.

In NOAA's National Weather Service, maintenance of four weather buoys in Hawaii would be discontinued, trimming $565,000 from the budget.

Among the budgetary increases, the fisheries service would receive additional funds for marine mammal research, fisheries computer technology, endangered-species recovery and conservation efforts, and fisheries enforcement and surveillance.

NOAA comptroller Andrew Moxam acknowledged that some NOAA programs, such as fisheries development and the National Ocean Service, are being squeezed by the agency's star-crossed, high-tech satellite and National Weather Service programs.

The equipment, part of an ambitious Weather Service modernization and environmental satellite program, has faced massive cost overruns and delays, further eating into traditional NOAA and NMFS budget items.

It's a problem that drew the ire of members of Congress last year, and Moxam said the cuts will face tough sledding again during this year's budget hearings.

"We are committed to going forward very strongly in fisheries programs," Moxam said, adding NOAA must first tend to congressionally mandated species-protection programs, which these days isn't leaving much for other projects.

The agency also is planning to trim $9.7 million from Coastal Zone Management grants and eliminate the politically popular research and outreach portions of the Sea Grant Program and National Undersea Research Program.

E-W Center funds won't be chopped

Star-Bulletin staff

President Bush's 2,000-page budget document contains several other items connected to Hawaii.

The East-West Center would be funded at current levels.

The National Park Service plans a $2.4 million project to replace the water storage tanks in Hawaii Volcanoes National Park.

And the Army Corps of Engineers will continue a handful of projects here, including:

- A $3.4 million flood-control project on Alenaio Stream on the Big Island.
- $73,000 worth of operation and maintenance work on a Barber's Point navigation project.
- $100,000 in operation and maintenance work on a Honolulu Harbor navigation project.
- $1.5 million worth of construction at Kawaihae Small Boat Harbor on the Big Island.
- $180,000 in design work on a Kikiaola small boat harbor navigation project on the Big Island.
- $2 million worth of construction at Maalaea Harbor on Maui.
- $4.5 million worth of operation and maintenance work on Port Allen Harbor on Kauai.
- $308,000 in survey work for the Wailupe Stream flood control study on Oahu.

POLICE BEAT

THA 1-18-92 A4

Woman found dead off Kahala

The body of an unidentified woman was found floating at noon yesterday in shallow water several yards off Kahala Beach fronting The Kahala Beach condominium, 4999 Kahala Ave., between Kahala Beach Park and the Kahala Hilton.

Detective Lt. Gary Dias of the police homicide detail said the body probably had been in the water since early yesterday, and there was no immediate evidence of violence. The city Medical Examiner's Office will determine the cause of death.

Dias said people on the beach had seen the body floating for more than an hour before they realized they were not watching a turtle, went out and pulled it ashore about 1:30 p.m.

Dias asked for the public's help in identifying the woman. He said the woman was Caucasian, 5-feet-8, 133 pounds, with shoulder-length wavy reddish-brown hair and a tattoo of a rose above her left breast. She was wearing a red, floral print dress.

Anyone recognizing her should telephone detectives at 943-3010.

SUNDAY, Jan. 12, 1992

5-B & ADV. A3

Advertiser photo by Carl Viti

Libby Peck Parish, friend of Queen Liliuokalani, is celebrating her 100th birthday.

Centenarian retells charmed life amid turtles and queen

One of Libby Peck Parish's earliest memories is of a turtle that came up beneath her as she was swimming alone at age three on a little beach on the ocean side of Mokolii, Chinaman's Hat Island.

Her granduncle left her on the island to play when he went fishing in his canoe.

The turtle, as Libby re- the opposite side of the canoe that it upset. Her granduncle was very annoyed. He grabbed her hair and set her on the shark, she said.

The next thing she remembers, she was on the beach where the shark must have deposited her because her granduncle was off shore fishing. Libby had to walk all the way home.

OUR HONOLULU

By Bob Krauss

The turtle, as Libby remembers it, gave her a ride around Chinaman's Hat, then brought her back to the little beach. Later, Libby went to school in Our Honolulu. The turtle was waiting for her when she came home on vacations, she said.

But the turtle would not let anybody else ride it.

As you can see, growing up in Our Honolulu was different when Libby was a girl. That's because she was born 100 years ago last Wednesday. The family is celebrating with a big luau at Kualoa Ranch today.

She lives at Ewa Beach with her daughter, Thelma Parish, a Sister of the Sacred Hearts. Talking to Libby about her girlhood is to turn back the clock almost a century and to suspend disbelief.

Try to understand. Her father was a British merchant. Her mother didn't like him well enough to marry him. Sister Thelma explained, "When it came to having a child in those days, the formal act of marriage wasn't all that important."

So Libby was *hanai*-ed by her granduncle and grandaunt who wanted a hapa haole baby. They lived at Waikane on the shore. Libby's granduncle was Kaukukala, *kahuna nui* from Waikane to Kualoa, and expert in fishing and healing.

He doted on Libby, took her with him wherever he went. He held her on the saddle in front of him and dropped her off on the tiny beach at Chinaman's Hat when he went fishing.

Kaukukala never said much. One day the child asked her gruff granduncle to take her along in the canoe. He said, "Whatever you see, don't be afraid."

She sat in front of the canoe proudly paddling, first on one side, then the other. On the outrigger side, her paddle hit something. She looked down and saw a shark bigger than the canoe swimming under the outrigger.

Libby squirmed so far to [illegible] walk all the way home.

Her mother married Solomon Peck, who had a draying business called Houstace & Peck, later to become Honolulu Constructing & Draying (HC&D). Hattie Peck, Libby's mother, worked at Washington Place for dethroned Queen Liliuokalani.

Her duties included sewing Hawaiian quilts and cleaning kahilis. Little Libby went to live with her mother and step-father.

The Queen put a wooden soda water box on the lanai under the window so Libby could step up and peek in to talk story while the Queen was supposed to be taking her nap.

If the ladies-in-waiting got suspicious and opened the door, the Queen shoved Libby's head under the window.

Libby entered Punahou School in the seventh grade and made her first big splash at age 16 in the 1906 Floral Parade. Up to that time, she said, pa'u riders had been elderly women, ladies-in-waiting to the Queen.

That year, younger women were urged to ride and Libby jumped at the chance. She borrowed a beautiful black horse owned by Fire Chief Paul Thurston.

Libby trained the horse not to be frightened of a pa'u by wearing a sheet when she practiced riding him in the swampy wilderness that is now Ala Moana Center. On the way home, a street car went by and the conductor rang the bell.

The fire horse mistook the bell for an alarm and galloped to the fire station.

Floral Parades ended before the reviewing stand at Cooke Field on the Punahou campus, where a band was playing. Libby's horse had once worked in a circus. When the band struck up, he danced and pranced, to Libby's intense mortification, all the way past the reviewing stand.

Such were the adventures of a girl, born 100 years ago, as she grew up in Our Honolulu.

Blue oceans

Pollution kills them slowly

Sunday's paper carried a report that Rio de Janeiro, with its fabled beaches, has seen a 40 percent drop in visitors since 1987. Murky, smelly sea water and filthy beaches are partly to blame.

A separate story said the Mainland's only living coral reef, in the Florida Keys, is disappearing. Pollution, of some or several sorts, may be the culprit.

The lessons for Hawaii are almost too obvious.

But one has to wonder: How did things get so bad in these other vacation spots? Along Rio's Ipanema and Copacabana beaches, did people just gradually "acclimate" to deteriorating conditions? Is no one with political clout aware that Florida's coral reefs are dulling and dying?

A check of clipping files here shows Honolulu's two major dailies reported 170 times on sewage bypasses, discharges, spills, lawsuits and clean-up efforts in 1991. There also were continuing reports of declining fish populations and unhealthy green sea turtles.

Let's hope the attention sewage is getting in this town shows we are not becoming acclimated to decreasing ocean water quality, but more concerned about the dangers it poses — economic as well as physical, psychological and social.

The Honolulu Advertiser

Established July 2, 1856

Thurston Twigg-Smith, *President & Chief Executive Officer*

Philip T. Gialanella, *Publisher & Chief Operating Officer*

Gerry Keir, *Editor*

John Griffin, *Editorial Page Editor*

Anne Harpham, *Managing Editor/ News*

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LETTERS

Gill-nets pose same dangers as drift-nets to marine life

So, Bill Paty appears to be adamantly against drift-netting on the high seas, but he has not adequately addressed the new type of gill-net fishing offshore. This is just a shorter-net, smaller-mesh version but equally destructive to all non-target species. Hawaii cannot afford this indiscriminate netting of the shore species. Since being lower on the food chain, they feed the commercial species.

It is suicidal to allow this stupid exploitation. I don't care who is doing it. Ecocide knows no racism.

Hilde K. Cherry
Eugene, Ore.

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'Silent extinction' befalls

Report sounds the alarm

By Linda Kanamine
USA TODAY

A century ago, the Kauai 'o'o (pronounced OH-OH) was a common little black bird whose songs echoed through the Hawaiian island swamps.

But disease, probably carried by mosquitoes introduced to Hawaii by settlers, dwindled its numbers to just 12 in 1960 and two in 1981.

Scientists watched the last known 'o'o in Kauai's Alakai wilderness build a nest each year and sing to attract a mate that never came. Then that songster disappeared by 1989.

Similar sagas have occurred over and over in the Aloha State — home to less than 1% of the nation's land mass, yet nearly 75% of its documented plant and animal extinctions, says a new report out today.

"There's trouble in paradise," says David Klinger of the Fish and Wildlife Service.

The status report, written with the Nature Conservancy of Hawaii and the Hawaii Department of Land and Natural Resources, heralds increasing attention to Pacific troubles, Klinger says. Next: 189 Hawaiian plants will be proposed for endangered status.

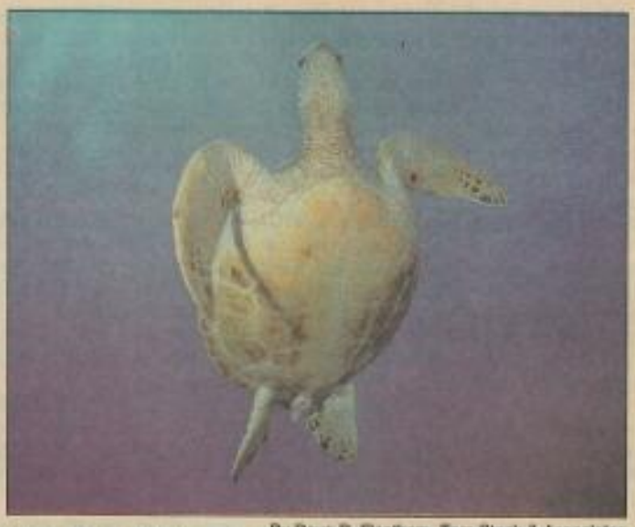
Hawaii's primeval wilderness has been overtaken by foreign plants and animals (pigs, parrots, pineapple, sugar cane, among others), and diseases, carried to the islands beginning 1,500 years ago first by Polynesians, then waves of Europeans and Asians.

An average 12 new species each year invade Hawaii. Scientists now are watching for the brown tree snake from Guam, a ravenous predator that eats birds and bird eggs, in otherwise snake-free Hawaii.

Today, another prime culprit is development that clears native habitat for agriculture, ranching and homes.

The scenario:

▶ At least half of more than 140 bird species are extinct. Of the 70 species remaining, 33 are endangered and 11 of those already may be beyond help.



By Dave B. Fleetham, Tom Stack & Associates

THREAT TO TURTLE HEALTH: Scientists are finding green sea turtles afflicted with tumors that weaken them.

8 candidate for extincti

Some Hawaiian bi
sibly on brink of ext
▶ 'Akialoa. Last
served in 1964.
▶ Oahu creeper.
served in 1985.
▶ Molokai creep
observed in 1963.
▶ Nukupu'u. Last
1988.
▶ Molokai thrus
seen in 1988.
▶ 'O'u. Last seen
▶ Small Kauai
Fewer than 20 left.
▶ Hawaiian crow
than 20 in the wil
captivity.

— *Linda Ka*

▶ 37 types of plan
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just a single plant rer
▶ 24 species of C
snails — part of nativ
— can no longer be f
▶ Two-thirds of ori
est cover is lost, inclu
of rain forests.

On Wednesday, P
National Geographic
Hawaii: Strangers in

ONMENT

Hawaii's flora, fauna

U.S. Fish and Wildlife Service

PROTECTED: Green sea turtles nest in a protected national refuge in Hawaii.

-taking a look at the crisis.

"Our goal is to alert people," says Carol Fox of the Nature Conservancy of Hawaii. "We worry about rain forests in Brazil and tend to think ours are all right. Well, they're not."

Among 10 urgent actions recommended to stem the tide of extinctions:

▶ Buy or set aside more habitat for native species.

▶ Offer incentives for private landowners to protect endangered species and habitat on their properties.

▶ Stop influx of foreign pest species.

▶ Stiffen conservation laws and penalties.

▶ Expand intensive rescue efforts of "species on the brink" of extinction.

Environmental damage is easy to understand when the culprit is a bulldozer, Fox says.

"But when it's the silent extinction of thousands of species on beautiful Hawaii, which you always thought was paradise, it's hard to understand the urgency. If we don't do something, we could lose the battle."

ENVIRONMENT

efalls Hawaii's flora, fauna

8 candidates for extinction

Some Hawaiian birds possibly on brink of extinction:

▶ 'Akialoa. Last one observed in 1964.

▶ Oahu creeper. Last observed in 1985.

▶ Molokai creeper. Last observed in 1963.

▶ Nukupu'u. Last seen in 1988.

▶ Molokai thrush. Last seen in 1988.

▶ 'O'u. Last seen in 1989.

▶ Small Kauai thrush. Fewer than 20 left.

▶ Hawaiian crow. Fewer than 20 in the wild, 10 in captivity.

— Linda Kanamine

U.S. Fish and Wildlife Service

PROTECTED: Green sea turtles nest in a protected national refuge in Hawaii.

▶ 37 types of plants are on the U.S. endangered species list. Among the rarest: 93 species with fewer than 100 individual plants left. Five have just a single plant remaining.

▶ 24 species of Oahu tree snails — part of native folklore — can no longer be found.

▶ Two-thirds of original forest cover is lost, including half of rain forests.

On Wednesday, PBS airs a National Geographic special, *Hawaii: Strangers in Paradise*, taking a look at the crisis.

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10/24/91
HB
A4

By Dean Sensui, Star-Bulletin

Net of death: State land board Chairman William Paty yesterday inspects part of a mile-long drift net found partially buried in the sand about a mile north of Kualoa Regional Park. The nets are prohibited within 200 miles of Hawaii because they indiscriminately trap and kill anything in their way, including dolphins, turtles and seals.

The Honolulu Advertiser

Hawaiians

Federal help coming

U.S. Housing Secretary Jack Kemp has promised Governor Waihee he will see that the Bush administration releases federal money for the Hawaiian Home Lands program. Since 1988, $3.6 million has been appropriated but held back. The reason given: possible constitutional problems with such funding.

This is welcome, but only as a beginning. It's a relatively small sum, and the federal government bears a large share of responsibility for the fact that so few Hawaiians have received homesteads 70 years after passage of the Hawaiian Homes Commission Act.

The back-to-the-land program was conceived to help save Hawaiians and their culture from extinction. While it can't do that all by itself, it can and should play an important role. Besides, a promise is a promise.

Kapus and the sea

At their finest, ancient Hawaiians were terrific environmentalists with strict rules — kapus — about fishing and hunting in the ocean to protect vital resources from overuse and extinction. Violating some kapus meant death.

So it's a long stretch to suggest a native Hawaiian on or off homelands has a "right" to kill a monk seal or capture green sea turtles, both protected by federal law as species in danger of extinction. Neither animal was so central to Hawaiian culture or vital to modern-day subsistence to merit the exemptions native Alaskans have for hunting certain endangered species.

A federal appeals court has justly rejected that misguided Hawaiian rights defense in two senseless attacks on these majestic creatures which belong to themselves and the ocean — not to any group of humans.

Hawaiians: Hunting rights are denied

FROM PAGE ONE

convictions, but were allowed to remain free pending the outcome of the appeal. But Kaneholani also was required to live on Oahu and receive alcohol and drug testing.

Aluli said he would need to review the appeals court ruling before deciding with his clients whether they should appeal further.

He noted that there are different issues in the two cases. With Kaneholani, for example, there is an issue over the fact that the seal-killing occurred on Hawaiian Homes land.

There was an argument that Hawaiian Homes lands are like reservations created for native Americans, in which different rules apply. When the federal government argues that Hawaiian Homes is not a "reservation" set aside for native Hawaiians, it suggests the government is saying there no longer is a trust relationship between the government and native Hawaiian beneficiaries, he said.

"I think what's important is that Hawaiians understand they must maintain their traditions and not acquiesce by failing to keep up their cultural practices, whatever their traditional and cultural practices used to be," Aluli said.

The decision also caught the attention of the Office of Hawaiian Affairs, which rejected the claim of a native Hawaiian right to hunt monk seals.

"We would have to have our attorneys carefully review the ruling to be sure that native rights that we do believe in have not been harmed," a spokeswoman said.

Playful seal pup to be moved to even more remote beach

By Jan TenBruggencate
Advertiser Kauai Bureau

LIHUE, Kauai — A gregarious female seal pup, moved for its own safety last week, will be moved once more today in an effort to prevent contact with humans.

The youngster, born April 26 on a Haena beach, was weaned six or seven weeks ago. As is usual with Hawaiian monk seals, its mother left the fat young pup alone.

In a normal situation, perhaps on the Northwestern Hawaiian Islands, the pup would play with other seal pups, or with turtles or anything else around.

But this pup took to playing with people.

Divers reported the seal would tap them with its flippers, or wrap them up in a seal hug. The seal would come ashore at popular Ke'e Beach and play with sunbathers.

There were also reports that the 175-pound baby seal, normally playful, had bitten one and perhaps more people, said Don Heacock, biologist with the state Division of Aquatic Resources.

Officials of the National Marine Fisheries Service, concerned about its increasing contact with humans, on Friday moved the pup from Kauai's North Shore to a remote South Kauai beach.

It wasn't remote enough.

Heacock said he received a report that a woman diver had been embraced by a seal pup, that it had stuck its muzzle under her arm, and that it had taken a speared fish.

"Now we're dealing with the bears in the park scenario. This seal could learn that people mean food," he said.

It was also reported to be following powerboats around in the Kukuiula Harbor.

"This is potentially a very dangerous time for the pup. It doesn't know a boat propeller from a coral polyp, and these young seals are extremely curious. That's what's so dangerous about marine debris. These pups will play with anything," Heacock said.

Wildlife officials today hope to move the pup again, this time to an even more remote beach.

A8 Thursday, September 5, 1991 The Honolulu Advertiser

A1 THE HONOLULU ADVERTISER 9/19/91

Unlike Alaskans, Hawaiians denied hunting rights to protected species

Advertiser Staff and News Services

SAN FRANCISCO — Native Hawaiians, unlike native Alaskans, have no legal right to hunt and fish protected species, a federal appeals court ruled yesterday.

In a 3-0 decision, the 9th U.S. Circuit Court of Appeals upheld the convictions of two native Hawaiians for killing a Hawaiian monk seal and for catching two green sea turtles. Both animals are protected by federal law, the seal as an endangered species, the highest level of protection, and the turtle as a threatened species.

Although he had not yet received the decision, deputy federal public defender Hayden Aluli, who argued the cases, said the ruling should tell Hawaiians they must establish their "traditional cultural practices."

The appeals court rejected a defense argument that the Hawaiians were entitled to the same treatment as native Alaskans, who are allowed by law to hunt endangered species for subsistence purposes. The defense also argued that natives of the Pacific Islands Trust Territories are allowed to hunt green sea turtles for personal sustenance.

Unlike the other groups, native Hawaiians have never had treaty rights to hunt endangered species, and have not made the hunting of those species a traditional aspect of their lives, said the opinion by Judge Alfred Goodwin.

He also said the defendants had not shown that "native Hawaiians, as a group, depend upon the hunting of endangered and threatened species for their subsistence."

The ruling upheld the conviction of Daryl Nuesca of Lahaina for taking two green sea turtles off Maui, and of Daniel Peter Kaneholani for killing a Hawaiian monk seal on Kauai.

Nuesca and Kaneholani were each sentenced to a year in jail on the

See Hawaiians, Page A4

A GOOD READ

Ocean

Making a Comeback

Hawaii's Green Sea Turtles

Betsy Reynolds

Fifteen years ago it didn't look good for Hawaii's green sea turtles. In the main Hawaiian Islands, the reef areas the turtles called home were being modified and destroyed, the beach areas where they laid their eggs were increasingly trampled and their nests were continually dug up by dogs, rats and other predators. In addition, the demand for commercial turtle products - turtle shell jewelry, combs and brushes - removed thousands of turtles from the population every year.

Today the species is making a comeback and can be found in limited numbers throughout the Hawaiian archipelago. The National Marine Fisheries Service (NMFS) estimates that in Hawaii this year there are an estimated 1,000 females (an increase of 250 since 1988), thanks to protective legislation and increased public awareness of the turtles' plight. The numbers are encouraging, the NMFS says, though they're still considered low; the green sea turtle continues to swim a

Hawaiians and *Chelonia mydas* by scientists, green sea turtles take an average of 25 years to reach sexual maturity and they breed only once every few years. This year roughly one-third of the present population of females will travel the 800 miles to the northwest Hawaiian Islands where most of the breeding population lays their eggs. Of the hundreds of eggs one female lays each season, only a few will reach adulthood.

Though their grace and agility in the water is unmatched, turtles are close to helpless on land. George Balazs, a turtle biologist for NMFS in Honolulu, heads up the turtle recovery program in Hawaii. On July 1 of this year, Balazs received a call that a female turtle had been found dead in a parking lot in Puna. The turtle's tags revealed that she had originally been tagged in the French Frigate Shoals in June of 1984, was recaptured there in 1987 and again in 1989. Balazs could not understand how a healthy, mature female from the northwest Hawaiian Islands could end up in a parking lot in Puna, but he is fairly certain the turtle was left in

Gill nets are another constant threat to turtles. Turtles take in oxygen by coming to the surface to breath. While swimming, they often become entangled in the transparent netting and drown. Gill nets off Waikiki are set in the same waters that green sea turtles use for feeding and sleeping. Regulations state that personal-use nets can be left in one area for up to 12 hours and there is no clear language on how these nets should be attended. Balazs has received several reports of drowned and nearly drowned turtles that have been tangled in nets in Waikiki. Along one stretch of beach near the Hyatt in Waikiki, Balazs reported, a turtle was rescued from a net in late 1989. One year later another washed up dead on the beach, clearly the victim of a gill net.

After humans, the debilitating tumor disease *fibropappiloma* may be the greatest threat to the green sea turtle. In some areas of Hawaii the disease has reached epidemic proportions. Scientists are unsure of what causes it, how it's spread and what effect it will have upon the recovery of the species. Turtles afflicted with the disease develop tumors in their mouths that restrict feeding; in their throats and nasal passages that restrict breathing; and on their flippers, necks and tails

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In 1978 the turtle population was given protection under the Endangered Species Act. State and federal laws now prohibit keeping turtles in captivity without a permit, and harassing, harming and killing them. Returning U.S. citizens who attempt to bring home sea turtle products risk a one-year jail sentence and a $20,000 fine. It's also illegal to ride or even touch green sea turtles while diving, snorkeling or swimming.

Known as *Honu* by the only a few will reach adulthood.

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ALAN JAMES ROBINSON, BISHOP MUSEUM PHOTO, CALENDAR OF NATURAL EVENTS, 1989

the sun to die. There was evidence that she had tried to find her way out of the sun and back to the ocean but didn't make it. "Why would anyone do something like this?" asks a clearly frustrated Balazs.

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To aid in assessing the state's current turtle population, NMFS has begun a program to involve the public. You can help by reporting any sick, injured, tumored, dead, captured or basking turtles you see to the NMFS Enforcement Division at 541-2727 or the local State Conservation and Resources Enforcement office at 548-5918.

TIDES – July 31 to August 6

Moon Phases: LAST QUARTER – August 3 NEW MOON – August 9 FIRST QUARTER – August 16 FULL MOON – August 24

Tide times and heights are for Honolulu Harbor.

Tide and moon information supplied by Doug Paine Design.

Good Morning...

—Associated Press

MORE FLOODING — China appealed to the rest of the world yesterday after the worst floods in decades continued to plague the country. Above, a man tries to make a raft with bamboo next to his submerged house.

Hash smugglers detained

HONOLULU (AP) — A federal magistrate yesterday ordered the 15-man crew of the hashish ship Lucky Star held without bail until a preliminary hearing Monday.

The 15 were taken into custody earlier this month after 100 tons of hashish was found aboard the 363-foot freighter.

U:S. Magistrate Daral Conklin found the defendants — 13 Pakistanis, one Bangladeshi and one American — were a flight risk and a danger to the community.

Federal authorities estimated the value of the hashish at $1.2 billion.

The ship was stopped July 1 some 600 miles west of Midway Island. It was escorted into Pearl Harbor last Thursday by a U.S. Navy destroyer.

Senate approves pay raise

WASHINGTON — The Senate voted to give itself a $23,200 annual pay raise last night in exchange for giving up thousands of dollars in speaking fees that two-thirds of the senators accept from special-interest groups.

A surprise amendment adding the pay raise to an appropriations bill was approved 53-45 after supporters characterized it as a measure only to "equalize" Senate salaries with those paid House members.

Leaders of both parties agreed to bring the potentially politically explosive issue to the Senate floor well after the evening network news and the departure of most reporters from the Capitol.

—BARON SEKIYA—WHT

FREEDOM — Scientists watch as a tagged turtle returns to the sea.

Scientists tagging turtles

By ANNE BAKER
West Hawaii Today

A young woman struggled with him in the swells just off shore of a South Point beach. She grabbed his front flippers as he thrashed to get away.

While the strong 110-pound turtle attempted to escape, the student holding on to him called for help. When other people arrived, they all managed to turn the green sea turtle upside-down, place a float beneath his shell and swim him toward land. His flippers waved around in the air.

"It is a bit like turtle rodeo.... They are strong, gentle creatures that don't like to be caught," said Emmanouela Athanasiades, a student from Greece who described catching the turtle yesterday at Punaluu Beach.

See TURTLE Page 4A

Kawaihae small-boat ow

By ARLENE STEPHL
West Hawaii Today

dock is in direct line with moored boats.

"The entire basin is now a deep dra

by police

.tates woman was charged
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the victim, who was held at
police.
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officials said she was being

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Johnson, will be available
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:ached at the Office of
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Mayor Lorraine Inouye.
:hedule an appointment.

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...Turtle tagging may one day save them

From Pagr 1A

The turtles are never subjected to stressful riding, but are caught by hand or corralled with a net and driven onto shore. Yesterday, their temporary captors were researchers and oceanography students gathering data to help the threatened green turtle species survive.

The turtles are thoroughly examined to determine injuries, disease, growth rate, migratory movements and population size. The information goes to a federal database to help design conservation strategies that will work, such as protecting breeding beaches from human intrusion, researchers said.

Punaluu Bay is one of eight locations throughout the Hawaiian Islands where turtles have rotuinely been captured, tagged and released in expeditions led by scientists of the National Marine Fisheries Service (NMFS) year, said George Balazs, researcher in charge of the NMFS Marine Turtle Program. The program costs about $76,000 a year, Balazs said.

Once the turtles at Punaluu were caught, they were carried up to shade resting upside down on huge floats that look like truck tire inner-tubes. Hundreds of curious people at the public beach were given handouts telling them what was going on. The turtles are measured, weighed and then tagged with a piece of metal, pierced through a flipper, for identification.

Only one of the 14 turtles caught during the Punaluu expedition was an adult and had been tagged before. This adult male turtle was originally tagged in 1982 at the breeding grounds 800 miles from his home in Punaluu, Balazs said. He weighed 150 pounds and was about 5 1/2 feet long from nose to tail.

The turtles captured are also thoroughly examined for injuries and signs of disease. One turtle captured had a propellor gash in his shell. The smallest turtle, about two feet long six years old, was found dead along the beach with slash marks on one flipper suggesting he was entangled in fishing line or a gill net and drowned, Balazs said.

The type of turtles captured reflect the actual population, he said, because very few turtles survive 25 years to reach maturity. The threats begin even before the half-dollar-sized turtles hatch.

"The kids race on the sand with four wheel-drives right over where turtles lay their eggs," said Komaka Bangay, who was born and raised at Punaluu Bay.

Bangay said he and his nephew built a fence around the nest. When the tiny turtles hatches, they instinctively headed for the brightest horizon, which is usually the ocean, and ended up in a parking lot confused by artificial lighting.

Green sea turtles navigate hundreds of miles, passing ideal beaches on Maui and Oahu to nest on the tiny islands of French Frigate Shoals, perhaps because that was where they hatched, Balazs said. The turtles that nest on Punaluu beach are hawksbill turtles, a critically endangered species of sea turtle.

Hawksbills once nested at Harry K. Brown Beach, now covered by Kilauea lava flows. It is also possible that acidic material from the lava is damaging seaweed Punaluu turtles feed on, Balazs said.

There is a new concern that land development may create alge that damages sea weed turtles feed on, said David Tarnas, University of Hawaii Sea Grant coordinator. Tarnas said he works with the private sector and government to make sure that the turtles are as protected as possible as coastal development continues. Athanassiades said that in Greece, coastal recreation development threatens many of the sea turtles because people hit turtles with jet skis and even picnic on the breeding beaches.

"It would be like putting a resort on French Frigate Shoals," Balazs said.

It is possible that human introduced pollution may cause a life-threatening tumor disease epidemic in some Hawaii green turtle populations, Balazs said.

Diseased turtles often are found in areas where human development is nearby, but have also been sighted in remote areas, a NMFS report indicates. Large numbers of tumor afflicted turtles have been sighted off the island of Oahu at Kaneohe Bay, Haleiwa Harbor, in the ocean off Kahala Beach and even at Hanauma Bay,the report said.

"In Kaneohe Bay, 60 to 70 percent of the turtles have this disease," Balazs said. "Hilo Bay is not a healthy place for them either."

For the island of Hawaii, tumor afflicted turtles are found in in Puhi Bay — waters adjacent to a sewage treatment plant outside of Hilo, the report said. Balazs said that there are several hypothesis about what causes the tumors: a virus, a bloodworm or a low-level pollutant supressing their immune system.

"The bottom line is we don't have an answer," he said.

The turtles are very site specific, living in the same ocean areas for most of their lives. Researchers have never had a tagged turtle from Punaluu show up in Hilo for example, he said.

...Boaters unhappy with Kawaihae situation

From Page 1A

According to Ruddle, this was before the time when Hawaii attained statehood in 1959, and was still a territory.

Around 1950, the U.S. Army Corps of Engineers had a simulated atomic bomb test in the area, with dynamite, to determine whether they could build

everyone."

But Bernie said the original pier was further north, more toward Mahukona, out of the wind and by the lighthouse in a more sheltered area.

"Kawaihae has been used for commercial shipping for a long time," he said. Not only cattle, but Bernie, too, shipped out of

already been some near disasters.

Three years ago a remote-controlled Matson barge came in and the props were turning the wrong way while it was docking. The barge damaged three boats and destroyed numerous moorings.

Matson paid the damages but

Kona turtle-tagging project is expanded

By Hugh Clark
Advertiser Big Island Bureau

WAIMEA, Hawaii — An environmental project aimed at helping the threatened Hawaiian green sea turtle has been expanded on the Kona coast of the Big Island.

The turtle-tagging program was started four years ago by the National Marine Fisheries Service and students at Hawaii Preparatory Academy at Kiholo Bay in North Kona.

Hawaii Prep officials announced the program has been expanded to a second study site at Puako in South Kohala.

According to Monica Traub, a faculty member who administers the HPA project, the study involves field work usually done at the university level.

George Balazs, a scientist with the federal marine agency, directs students in capturing, measuring, tagging and studying the green sea turtles to help insure the long-term survival of the species.

The use of the Puako coastal reef was first discussed last summer during an exploratory visit. That successful survey, Traub said, "convinced us that this would be a valuable second study area . . . "

Student SCUBA divers tagged 22 turtles in January and February at the Puako site. Some 110 turtles were tagged at Kiholo in six days.

Fifteen students worked this year on the Kiholo and Puako projects.

With two sites, students are able to compare growth rates, food sources, population size and mortality.

They also look for tumors that are believed to be devastating Hawaii's turtle populations and try to determine the coastal movement of the turtles between the two sites, located about nine miles apart.

POLICE BEAT

Two uninjured as copter crashes

A helicopter pilot and his student escaped injury yesterday when their Hughes 300 two-seat helicopter crashed on its side during maneuvers at a Kunia cropduster airstrip, police said.

Both the pilot, 32, a Mainland resident, and his student, 28, a local resident, climbed out and walked away from the wrecked Hawaii International helicopter, police said. Damage was estimated at $75,000.

The Federal Aviation Administration was investigating the 12:45 p.m. accident, which occurred at the Oahu Sugar canefield airstrip off the Honolulu side of Kunia Road about halfway between Waipahu Sugar Mill and Hawaii Country Club.

Police said they were told the helicopter pilot was at the controls and reported the craft "bottomed out," falling on one side and heavily damaging both rotors and its frame. The cockpit "bubble" appeared undamaged, police and firefighters said.

Ewa stabbing: An Ewa Beach man was in critical condition last night with a wound in the abdomen after being stabbed by his roommate in a rooming house on Haiamu Street, police said. The roommate was arrested.

Detectives said the victim, about 29, clutching his abdomen, went to the home's director just before 2 p.m. An ambulance was called and he was taken to Ewa Beach Community Center, where an Army medevac helicopter took him to The Queen's Medical Center.

The suspect, also in his late 20s, was booked at Pearl City Police Station for investigation of attempted murder, then taken to the Honolulu Police Station, where he was held last night without charges as the investigation continued.

Rape charged: Sam Cooper Jr., 26, of Pali Highway, was charged yesterday with first-degree sex assault in a reported attack last Sunday on a woman who said she was beaten and raped in a Chinese Cultural Plaza stairwell.

The woman said she agreed to go to the lonely walkway with a man "to do drugs," but instead was attacked. Police said she saw him again Friday night in Chinatown and pointed him out. Cooper was arrested at North Hotel and Maunakea streets at 10:25 p.m. His bail was set at $10,000 pending arraignment in District Court.

Futile search: Coast Guard, Navy and Air Force rescue personnel searched an area off Bishop Point in Pearl Harbor yesterday after receiving a report that a tour boat had struck a diver.

Coast Guard spokesman Keith Spangler said the Hickam Fire Department reported the incident at about 1:30 p.m. but an intensive search of the area failed to turn up any signs of a diver.

"We also got reports that it could have been a sea turtle," he said. "Everything that the Coast Guard has received so far indicates that it was a sea turtle but we're just making sure all the ends are tied."

Spangler said the search was called off at nightfall but the case will remain open through today.

"Basically it depends on whether anybody calls tomorrow and reports a missing person," he said.

2-28-91 A7
T.HA.

POLICE BEAT

Wounded turtle rescued

Honolulu Police officer Rogelio Mata attempts to remove a spear from a Hawaiian green turtle that was recovered from the car of two Ewa men who were arrested and charged with violating a state law that prohibits possessing or carrying such threatened species. Andrew Sagucio, 36, and James V. Borja Sr., 45, were arrested on the H-1 Freeway after someone reported seeing the turtle taken from Sandy Beach.

Advertiser photo by Charles Okamura

Scientists Use Brawn to Assist Sea Turtles

By Harry Whitten
Star-Bulletin Writer

The endangered green sea turtle goes to East Island of French Frigate Shoals to dig its nest and lay its eggs in the sand.

But it can't dig nests in concrete, which is why nine scientists recently spent five days of hard manual labor breaking up abandoned concrete foundations on East Island.

The efforts should lead to increased productivity for the Hawaiian green turtle population, according to George H. Balazs, an authority on the turtles.

Balazs, of the University of Hawaii's Institute of Marine Biology, is on loan for a year to the National Marine Fisheries Service to do sea turtle research.

East Island is one of 12 small islands within the shallow waters of French Frigate Shoals, 500 miles northwest of Honolulu and a part of the Hawaiian Islands National Wildlife Refuge.

THE AREA ALSO is heavily used by many species of seabirds and by the Hawaiian monk seal, another endangered species.

East Island has only 12 acres but it is the most important site in the entire Hawaiian chain for nesting by green sea turtles, Balazs said.

The work done by him and eight other persons from the National Marine Fisheries Service and the U.S. Fish and Wildlife Service consisted of removing as much metal, wire and wood debris as possible from the ground surface of East Island.

The concrete foundations originated from occupancy of the island by the U.S. Coast Guard during the 1940s. The metal, wire and wood debris discouraged, and at times entangled, nesting turtles and hatchlings emerging from the nests.

THE METAL was transported to Tern Island, another of the French Frigate Shoals islands, for use as landfill, Balazs said. The wood was burned and the concrete was consolidated into a pyramid.

Phase II of the project, scheduled next year, will consist of getting rid of the concrete, perhaps by hauling it out into deep water.

The hard-working scientists used two electric jackhammers, a portable gasoline-driven electric generator, sledgehammers, crowbars, picks and shovels.

CLEANUP—Scientists break up the principal concrete foundation, measuring 20 by 65 feet, on East Island in order to make more space available for nesting by green sea turtles. —Photo by George H. Balazs.

FACT SHEET ON THE CLEAN-UP PROJECT CARRIED OUT
AT EAST ISLAND, FRENCH FRIGATE SHOALS,
DECEMBER 15-19, 1980

OBJECTIVES:

1. To break up abandoned concrete foundations on East Island that originated from the occupancy of the U.S. Coast Guard during the 1940's.

2. To remove as much metal, wire, and wood debris as possible from the ground surface of East Island.

East Island consists of only 12 acres, but it is the most important site in the entire Hawaiian chain for nesting by green sea turtles (a threatened species under the U.S. Endangered Species Act). The ground area covered by concrete foundations has been unavailable for turtles to dig nests and lay their eggs. Metal, wire, and wood debris regularly inhibit, and at times entangle, both nesting turtles and hatchlings emerging from nests. The enhancement of this important island habitat through clean-up efforts will lead to increased productivity in the Hawaiian green turtle population.

East Island is one of 12 small islands situated within the shallow waters of French Frigate Shoals, a part of the Hawaiian Islands National Wildlife Refuge. French Frigate Shoals is located approximately 500 miles northwest of Honolulu. In addition to being a critical breeding site for green turtles, the area is also heavily utilized by numerous species of seabirds and the endangered Hawaiian monk seal.

PERSONNEL AND AGENCIES:

National Marine Fisheries Service

William G. Gilmartin
George H. Balazs
Andrew E. Dizon
Douglas DeMaster
Alan Kam

U.S. Fish and Wildlife Service (agency responsible for the Hawaiian Islands National Wildlife Refuge)

Gerald Ludwig
John Andre*
Robert Schulmeister*
Susan Schulmeister*

*Resident caretakers/biologists at Tern Island, French Frigate Shoals.

The 'turtle man' needs your help

JIM RIZZUTO

George Balazs is looking for a small turtle. He's hoping some marlin found one and that you found the marlin.

George is the "turtle man" at the National Marine Fisheries Service where he runs the Hawaiian Sea Turtle Research Program. He read an article that appeared in this column last month describing the strange contents of marlin stomachs.

"It reminded me of my year-old quest to locate anyone in the fishing community who has found a small (12 inches or less) sea turtle in a fish's stomach," Balazs penned. "As you probably know, sea turtles in Hawaii, and nearly everywhere else, are never found unless over 12 inches or so."

Balazs thinks the smaller turtles may live in the open ocean away from land during some early stage of development.

If so they may become the prey of a variety of fish, including marlin, tuna, sharks and even mahimahi.

Baby turtles hatch from eggs laid in beach sand, you may well know. After they scramble down to the sea, they disappear from view and scientific purview.

Turtle populations seem to be in increasing trouble with growing incidences of tumors and high mortality from eating plastic garbage they encounter at sea. More knowledge of their life cycles may help scientists protect an assortment of interesting creatures already on the endangered species list.

The bellies of sea turtles have become collecting points for the discards of society. Balazs once documented 79 cases "in which the guts of turtles were loaded down with synthetic scrap including fishing lines and nets, plastic bags, beads, bottles, vinyl films and tar balls."

"Anyone who hears of the recovery of a small turtle at sea or in a fish's stomach should notify me collect," Balazs said. His number is 943-1240.

Balazs also sent me an updated list of shark attacks in the Hawaiian Islands. The last time his figures appeared in print was 1987.

Since then, the Hawaiian Islands have recorded twelve more shark attacks, five of which have been fatal. On the list of attacks since 1980, Oahu leads with 31, and Kauai comes a close second with 29. The Big Island and Maui come next, tied at 17 each. There have been nine fatalities in the last decade. The greatest percentage of recent incidents were attacks on surfers.

Australian fisherman Marc La Delle wrote to say that the figures provided by the U. S. National Marine Fisheries and

See RIZZUTO Page 19A

WEST HAWAII TODAY 9/10/90 13A

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Honolulu, Hawaii 96816
PHONE: 734-8124
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HAWAII TRIBUNE HERALD

SEP 19 1990

After Dark in Park

Hawaii Volcanoes National Park presents a continuation of its successful "After Dark in the Park" series of evening programs and moonlight hikes. Residents and visitors alike are invited to join guest speakers and park rangers for this autumn series. All programs are free.

The series begins on Sept. 27 with zoologist George Balazs from the National Marine Fisheries Service presenting a rare view of Hawaii's sea turtles in the program "Magnificent and Mystical Turtles." Hear more about these fascinating creatures, including an update on the endangered Hawksbill, during this unique slide presentation. Learn the legend of "Kauila, the Turtle Girl of Punalu'u." Meet at the Visitor Center at 7 p.m.

VOL. XXXI NO. 9 7/19-25/90

BRIEFLY

WINDWARD SUN PRESS

Deborah Booker photo

A recently posted pollution sign stands near Kaelepulu Stream at Kailua Beach Park to warn the public of possibly contaminated water in the stream. The state Department of Health posted this and another sign along the stream in response to community concerns that waders and swimmers were not being adequately warned about the bacterial contamination. According to deputy health director Bruce Anderson, the two signs will be relocated closer to the stream to make them easier to read, and a larger sign with the same message will be posted on the makai side of the Kaelepulu Bridge.

7/19-25/90

Turtle pellets

WINDWARD — The state Department of Health has reported that turtle pellets have been washing up at Kualoa Beach Park recently.

Health officials say the fecal material is from green sea turtles in nearby Kaneohe Bay and may be easily mistaken for human excrement. The same material covered the beach early last August.

Health officials were concerned last summer and closed down the beach when the pellets first began washing up.

So far the quantity of pellets is not as extensive as last year, and no health problems have been reported. However, water quality is being tested routinely by the department to insure the safety of swimmers at the beach.

Signs have not been posted because no public health risk is associated with the material, according to state officials.

WINDWARD SUN PRESS

The Sunday Star-Bulletin & Advertiser Honolulu, June 17, 1990 A33

Turtles beaching on Maui pose an ecological dilemma

By Edwin Tanji
Advertiser Maui County Bureau

WAILUKU, Maui — Some Maui residents have sighted sea turtles clambering up the beaches of Maui, and Maui Councilman Wayne Nishiki is suggesting that some beaches ought to be set aside as nesting grounds.


Nishiki

That may not work out too well, a state aquatic biologist said.

"It's really hard because it's up to the turtles where they're going to come up," said Skippy Hau, a specialist with the Department of Land & Natural Resources.

Nishiki's proposal is in a letter in which he notes there have been sightings of turtles coming ashore at night at a West Maui beach.

He said the county should determine whether there should be a way to protect the animals "in their natural habitat by providing them with suitable nesting and breeding areas here on Maui."

Hau said he is not aware of the turtle sightings reported by Nishiki, but he has received frequent reports of turtles coming ashore at night around the island, including a recent one at Kihei. They may be coming ashore to nest, but there has been only one confirmed case of a turtle nesting, he said.

That case involved a rare olive Ridley turtle that was seen by a fisherman on a beach near Paia laying its eggs. Because of fears that the eggs could be damaged, Hau said, he removed them and kept them in a barrel where they eventually hatched. The young turtles were released into the ocean.

Turtles also are likely to be go ashore on other islands, including Kahoolawe, Molokai and Lanai, where they are less likely to be disturbed, he said.

Sea turtles are protected under the federal Endangered Species Act and by state law, but they are subject to animal attacks.

Newly hatched turtles in particular may be attacked by dogs, cats, mongooses and sea birds, he said.

243-7684 Nishiki

Scientists puzzled by disease that kills green sea turtles

☐ A parasitic worm and a virus are two suspects under study

By Peter Wagner
Star-Bulletin

THE source of a mysterious disease killing an increasing number of green sea turtles in Hawaii continues to elude scientists.

All that is certain about fibropapilloma — tumors that attack turtles' eyes, throats, flippers and other body parts — is its fearsome toll.

Field studies last week off the island of Molokai turned up evidence of the disease in more than a third of 36 turtles examined. And in Kaneohe Bay last month, half the 42 turtles studied had tumors.

"The more we look, the more we find," said zoologist George Balazs of the National Atmospheric and Oceanic Administration.

Infected turtles also have been found off the Big Island, and at numerous locations around Oahu including Haleiwa Harbor, near the Kahala Hilton and at Hanauma Bay.

At Palaau on Molokai, the first case was diagnosed in 1985. Since then, the incidence of infected turtles has increased by about 5 percent a year, Balazs said.

The disease also has been found in Florida, where scientists are trying to determine if it is being spread from animal to animal.

The problem is apparently limited to the two distant states, another puzzling fact.

"This is a very definite concern, principally because little is known about these tumors," said George W. Boehlert, director of NOAA's Southwest Fisheries Center Honolulu Laboratory.

Two possible causes now under study are a virus that can be spread among the species, or a parasitic worm that lives in seaweed — a prime food source of sea turtles.

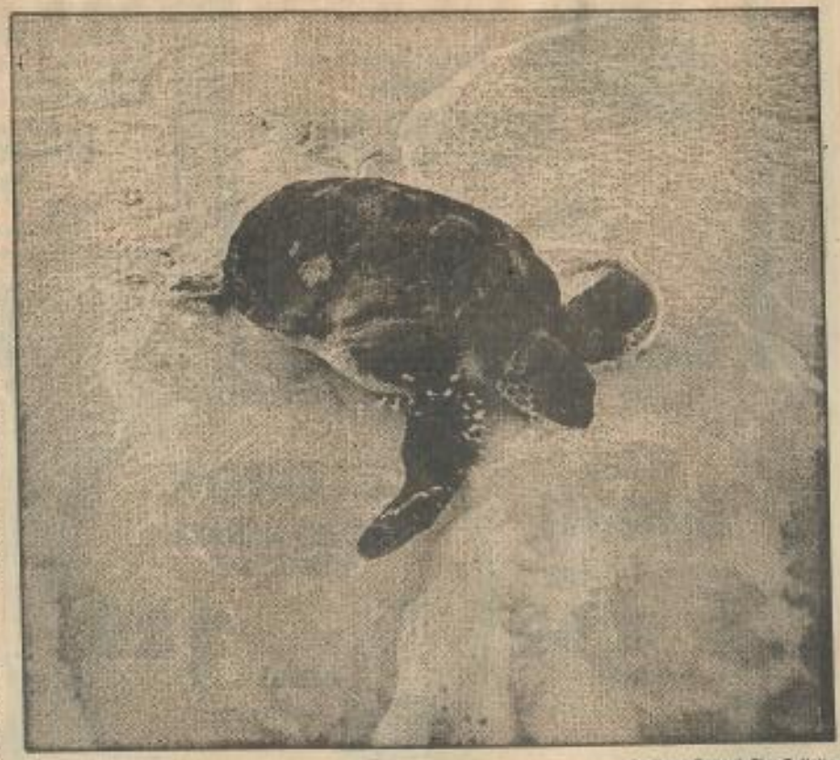
But no answers have yet been found.

On their bodies, tumors make it hard for turtles to move, hindering their ability to hunt or escape predators. Near their eyes, they cause blindness. In their mouths, the tumors make it difficult to eat or breathe.

Always fatal, the tumors sometimes grow to 12 inches in diameter.

All six turtles sighted this month in Puhi Bay near Hilo on the Big Island were afflicted. The area is adjacent to a sewage treatment plant.

But while some have speculated that pollution is the cause of the disease, that has yet to be established.



By Dean Sensui, Star-Bulletin

A mysterious disease is creating tumors and killing an increasing number of green sea turtles in Hawaii and Florida.

The green sea turtle, protected under the Endangered Species Act, has made a comeback in the past 15 years from widespread hunting that thinned populations. About 750 nesting adults are now estimated in Hawaiian waters, a 70 percent increase since 1973, scientists say.

A meeting of scientific experts is planned here in December to discuss the problem.

HAWAII
Wednesday, July 4, 1990 ■ Star-Bulletin
A3

Turtles get their freedom today

☐ Four go to sea off the Kohala Coast from a hotel's ponds

By David Oshiro
Star-Bulletin

WATCH out, Donatello! Look out, Leonardo! Step aside, Raphael!

The Teenage Mutant Ninja Turtles may be heroes to millions of kiddies, but today at the Mauna Lani Bay Hotel on the Kohala Coast of the Big Island, they took a back seat a quartet of Hawaiian green sea turtles.

The green sea turtles — they don't have names — celebrated Independence Day today.

The young turtles were released this morning from courtyard ponds at the Kohala hotel to begin life in the wild.

The reptiles are about 2 years old and have spent around eight months at the hotel. They are part of a program started at Sea Life Park to give the federally protected species a chance to enter the ocean as adolescents rather than helpless youngsters.

"As young hatchlings, their mortality rate is pretty high because there are so many predators out there," said Daniel Akaka Jr., Hawaiian historian for the Mauna Lani resort.

The resort was chosen for the program by Sea Life Park because a natural turtle seaweed feeding area lies offshore, Akaka said.

At a low-key celebration today, staff members, guests and visitors snacked on turtle-shaped cookies and were given turtle memorabilia, including caps and buttons.

"This is nice way to let everybody know that we're trying to do our part to convince the public that they can help save endangered species," Akaka said.

Turtle feces called no threat to humans

Advertiser Staff and News Services

Turtle pellets that can easily be mistaken for human feces washed up on Kualoa Beach last week for the second time in a year, but a spokesman for the state Health Department said there are no plans to close the beach.

Experts said last year that the feces might be from green sea turtles in the Kaneohe Bay area that have been suffering from mysterious tumors. A conference will be held in Honolulu in December to discuss possible causes of the tumors.

Eugene Akazawa, supervisor of the state's water monitoring program, said small numbers of pellets were reported Friday, but state officials who checked the beach have not found any since then.

Akazawa said state officials are also testing the water quality in the area, but said warning signs have not been posted because the pellets pose no public health risk.

Feces were also reported on the beach last August, prompting the Health Department to close Kualoa Beach for several weeks.

At the time, at least one marine scientist speculated that turtles stricken with tumors might be shifting their habitat slightly to the north, prompting the current to deposit the feces on the beach.

The meeting on the cause of the life-threatening tumors was called by George Boehlert, director of the Southwest Fisheries Center Honolulu Laboratory. Boehlert said the disease, called fibropapilloma, appears to be limited to Hawaii and Florida.

Recent studies off Molokai have shown more than a third of the turtles examined had the disease, which causes large tumors. Diseased turtles have also been found around Oahu, Maui and the Big Island.

The Honolulu Advertiser Thursday, July 12, 1990 A7

The Sunday Star-Bulletin & Advertiser Honolulu, June 17, 1990 A33

Turtles beaching on Maui pose an ecological dilemma

By Edwin Tanji
Advertiser Maui County Bureau

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Nishiki

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"It's really hard because it's up to the turtles where they're going to come up," said Skippy Hau, a specialist with the Department of Land & Natural Resources.

Nishiki's proposal is in a letter in which he notes there have been sightings of turtles coming ashore at night at a West Maui beach.

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243-7684 Nishiki